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ABSTRACT

In 1981 and 1982, the Research Libraries Group (RLG) and four other organizations participated in a coordinated study of public online catalog users and nonusers. Standard, self-administered questionnaires were used to gather data from 8,094 users and 3,981 nonusers in 31 research, academic, community college, public, and governmental libraries with 17 different online catalogs. This final report presents findings and implications of data collected at three institutions: Dartmouth College, Northwestern University, and Stanford University, all members of the Association of Research Libraries (ARL). The data from these institutions are contrasted with those collected from 12 other ARL libraries. These data include uses of the public online catalogs, perceived problems, preferences for improvement, and user and nonuser characteristics. The report also presents the results of a related special study which gathered qualitative evidence in structured interviews with library staff at Dartmouth, Northwestern, and Stanford. A final chapter discusses implications of the study and notes a general patron acceptance of public online access catalogs. Appendices include a list of participating libraries and computer systems, statistical analyses of data collected, sample questionnaires, and other documents. An executive summary and 47 tables are also provided. (ESR)

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PUBLIC ONLINE CATALOGS AND RESEARCH LIBRARIES

Final Report to the Council on Library Resources

The Research Libraries Group, Inc.
Stanford, California 94305
September 1982

IR050167

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NOTE TO THE READER

This is one of several project reports for this study to be submitted to the Council on Library Resources under separate grant and contract proposals. Reports will also be submitted by:

J. MATTHEWS & ASSOCIATES, INC.
THE LIBRARY OF CONGRESS, PLANNING OFFICE
ONLINE COMPUTER LIBRARY CENTER, INC.
UNIVERSITY OF CALIFORNIA, OFFICE OF THE ASSISTANT VICE-PRESIDENT FOR LIBRARY PLANS AND POLICIES

The Data Collection Manual and Sampling Plan (March 1982), produced by RLG and the Data Analysis Plan (August 1982) produced by the University of California have been submitted to the Council as separate reports.

All reports will be available through ERIC.

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This report was prepared by Douglas Ferguson, David C. Miller and Daphna Baratz of the RLG staff. Barbara J. Brown, Associate Director of Program Coordination as the responsible RLG staff officer was helpful throughout the 18 months of the project.

The study benefitted during the design phase from the advice of the following consultants: Christine L. Borgman, Stanford University Department of Communication, Prof. Robert Burnkrandt, Ohio State University College of Administrative Science, Prof. Pauline Atherton Cochrane, Syracuse University School of Information Studies, Prof. F.W. Lancaster, University of Illinois Graduate School of Library Science, Prof. William Paisley, Stanford University Department of Communication, and Prof. Albert H. Rubenstein, Northwestern University Department of Industrial Engineering.

Data collection was ably supervised by Emily Fayen at Dartmouth College, by Brian Nielsen and Joanna Miller at Northwestern University and by Kenneth W. Parker and Sabine Gnesdiloff at Stanford University. The project particularly acknowledges the contribution of Brian Nielsen and the Northwestern library staff for its support during pretesting and pilot testing of the data collection instruments.

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We appreciate the review of various project documents by staff members within the RLG central staff, by staff at RLG libraries, by Council on Library Resources staff members and by other individuals. Statements of fact and interpretation in this report are the responsibility of the project staff.

Douglas Ferguson
Project Manager

EXECUTIVE SUMMARY

Early in 1981, the Council On Library Resources funded the Research Libraries Group and four other organizations to make a coordinated study of public online catalog users and nonusers. This is the Final Report submitted to the Council by RLG. Separate reports are being submitted by the other participants: The University of California, the Library of Congress, the Online Computer Library Center, and J. Matthews & Associates, Inc.

Study objectives were:

1. To produce data and interpretations that enable designers of public online catalogs to improve system interface features. The system interface includes the commands, displays, indexes and similar software- and hardware-related features.

2. To produce data and interpretations that enable libraries to improve the implementation and support services (the organization interface) for public online catalogs.

3. To collect additional data that enable libraries to extend public online catalog services to potential users.

During January-May 1982, standard, self-administered questionnaires were used to gather data from 8094 users and 3981 nonusers in 31 research, academic, community college, public, and governmental libraries where seventeen different public online catalogs are provided. All data was sent to the University of California Division of Library Automation where it was aggregated, cleaned, analyzed and reported according to a plan jointly developed by study participants. Thus the data gathered by all was available to each.

Because of RLG's special interest in research libraries, data was gathered from Dartmouth College, Northwestern University, and Stanford University, all members of the Association of Research Libraries (ARL). In a related special study, RLG gathered qualitative evidence in structured staff interviews at Dartmouth, Northwestern, and Stanford.

In this Report, data and findings for the three institutions named are compared and contrasted against another, aggregate sample labelled "ARL." The ARL sample includes all 12 of the remaining ARL members surveyed. Computer catalog coverage and features as well as sample size varied from one institution to another. Further, many questions invited respondents to give multiple responses, so that response percentages reported do not equate with the number of individuals responding. For such reasons, the reader is urged to exercise caution in making comparisons and inferences.

Many public online computer users in the four samples studied by RLG are college undergraduate students aged 20-34 studying the humanities and social sciences who visit the library daily or weekly and who use both the computer and the manual catalog on most visits They do not appear to make above-average use of computers elsewhere (Chapter 6).

Patrons who become public online catalog users often learn of its availability by noticing a terminal in the library. By their own reports, they often learn to use it and to make searches without receiving any staff assistance, though staff observations do not support the respondents on this point(Chapters 3 and 8).

Users search objectives often are coursework-related and specific, and they bring with them and search by specific terms, especially complete author's name, complete title, and/or complete subject heading. However, users report subject search objectives in numbers almost as high as specific item search objectives. The percent of subject searching is far higher than reported in studies of manual catalogs. Overall, users like the public online catalog, in part presumably because about half of them typically find what they are looking for, and often find other items of interest as well (Chapter 3).

Typical problems encountered and improvements desired by public online catalog users were as follows: Concerning databases, users are often uncertain exactly what databases cover, but they want broader coverage, especially more older books. Concerning software, increasing the result of a search is a common problem, while the improvements most wanted concern providing or extending subject access. Concerning terminals, the height of terminal tables and inadequate writing space are problems, while providing more terminals is the improvement most desired. Printout and circulation capabilities are also favored. Concerning library services, users mention the absence or inadequacy of signs and brochures in terminal areas. (Chapters 4 and 5).

Nonusers of public online catalogs typically explain either that they have had no time to learn or have not felt a need to do so. Nevertheless, they say they are favorably disposed toward the public online catalog, and believe that it would be easy to learn; indeed, they expect to become users in the future. Like users, nonusers visit the library and consult the manual catalog often. They also generally resemble users in age, academic focus, academic area, and education level (Chapter 7).

Library staffs interviewed observe that users have more apprehensions about public online catalogs and request more staff assistance than the survey data may suggest. Staff feels many users experience substantial difficulty in learning to use the catalog. Exact compliance with entering terms, resuming a search, and beginning a new search are particular problems mentioned. On the other hand, staff perceives that the relative rigor required to use public online catalogs is slowly improving users mastery of catalog concepts, terminology, features, and procedures generally. Materials in other libraries and items newly added to the collection also come to users attention more often and sooner than before (Chapter 8).

Library staffs express mixed feelings about the impacts of the public library catalog on the library itself. On the one hand, they perceive that it enhances staff's "high tech image." The computer catalog also provides convenient, dif-

fused access to the union catalog from every terminal. Terminal access permits prompter, more effective patron service in handling phone inquiries or in teaching while assisting patrons at service desks instead of merely giving general guidance, then dispatching patrons to the manual catalog. On the other hand, staffs are not certain to what extent they wish to be seen as "computer people" rather than "book people." They note, too, that general patron access to dispersed terminals results in patron service requests of all sorts to whichever staff member may be nearby. They also are apprehensive about their dependence on the computer: "I dread the Friday evening five years from now when I go to the online catalog and it's down, and they all have papers due on Monday." Public service staff members, the main point of patron contact, also desire to be involved earlier, more often, and more intensively in the design, implementation, and redesign of public online catalogs (Chapter 8).

Some implications of these findings are: Patron acceptance of public online catalogs seems assured, although special efforts will be required to persuade some user groups. Making terminals highly visible and having enough of them to insure ready availability on the average greatly promotes user acceptance and use. If clear and complete signs, brochures and onscreen aids designed to promote self-directed learning and use are provided, patrons will appreciate and use them, thereby minimizing requests for staff assistance. Database scope, contents, and range priorities should be matched as nearly as possible to users priorities, and inclusions and exclusions should be brought to users attention early and often. Finally, given the many parties whose interests are at stake (patrons, technical and public services staffs, systems designers and operators, managers and administrators), vigorous library management leadership and insistence on cooperative, effectively integrated efforts are essential for successful implementation of public online catalogs (Chapter 9).

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Chapter 1

INTRODUCTION TO THE STUDY

In early 1981 the Council on Library Resources funded five organizations to conduct a coordinated study of user and nonuser responses to public online catalogs.[1] A public online catalog, in the most general sense, is a library bibliographic database that is directly searchable by library patrons through terminals in library buildings or elsewhere. The principals in the study consortium were J. Matthews & Associates,Inc., the Library of Congress, the Online Computer Library Center (OCLC), the Research Libraries Group (RLG), and the University of California. The main study involved two questionnaires: one completed at the terminal by catalog users and the other completed in the library by individuals who had not used the computer catalog. Thirty-one library systems comprising seventeen different online catalog computer systems participated in the survey. The questionnaires and methodology were pilot-tested late in 1981. The main data collection took place in April and May 1982, and analysis and reporting were completed during Summer and Fall 1982. This chapter describes the scope and focus of the study.

1.1 THE CONTEXT AND RLG'S RESPONSE

The database design efforts of the 1960s leading to the system building efforts of the 1970s are resulting in direct access to online catalogs by library users in the 1980's. Terminals once found only behind reference and circulation counters now are found in catalog areas, stack areas, library halls, offices and other high-use locations. These terminals connect to a variety of systems, ranging from commercial circulation systems, to bibliographic utilities, to locally developed in-house online catalogs.

Research efforts have paralleled growth in online catalog accessibility, focusing on issues such as number of terminals needed for a public online catalog, catalog database enhancements, and the nature of subject access. Related work has emphasized human factors that affect terminal design and software psychology. But research, important as it is, takes time, and implementation is not waiting. Demand is high and academic and public libraries are moving ahead quickly to make online catalogs directly available to their user communities.

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[1] This chapter is based on the following article: "The CLR Public Online Catalog Study: An Overview", by Douglas Ferguson, Research Libraries Group (RLG); Neal K. Kaske, Online Computer Library Center (OCLC); Gary S. Lawrence, University of California; Joseph R. Matthews, J. Matthews & Associates, Inc.; and Robert Zich, Library of Congress; Information Technology And Libraries June 1982, pages 84-97

Within this context the Research Libraries Group sought support for a broad-based study of user response to existing public online catalogs. This response was based on the following perspective: Direct public access to local library databases and to the union database is an objective of the Research Libraries Group. This objective supports the RLG goal of providing scholars with increasingly sophisticated access to bibliographic and other forms of information. RLG public access activities support member libraries and the partnership as a whole in moving progressively toward an enhanced public sevice capability that will enable scholars at member institutions to locate bibliographic and other forms of information through computer-retrieval systems that are flexible, reliable, and easy to use.

While there is an emerging consensus that direct public access to online catalogs is highly desirable in the near future, there is diversity within the RLG partnership as to the level of local system planning and development. Northwestern has had a pilot online catalog available to the public since mid-1980. Dartmouth is jointly developing a mini-computer based public online catalog with Bibliographic Retrieval Services, Inc. Pennsylvania State University and New York University are in an advanced stage of planning for public access. Other RLG members that presently manage their cataloging through RLIN are interested in learning from the public access experience of local systems implemented within RLG and at other institutions. Throughout RLG there is strong interest in resolving the problems of public access to online catalogs.

In particular, RLG is committed to supporting a strong user orientation in public access systems at all of its member institutions. A concrete expression of this concern was a standards resolution passed at the August 1980 meeting of the RLG Board of Governors:

> The Research Libraries Group is committed to providing increasingly sophisticated access to local and RLG-wide bibliographic data. Scholars at member institutions must be able to search local library databases and the union database in familiar ways as they have been able to search card catalogs, whether at their home institutions or at another RLG institution.
>
> THEREFORE: The Research Libraries Group commits itself to the development of standards in those portions of automated retrieval systems used directly by library patrons, such as command languages and display formats. Furthermore, the Research Libraries Group will work to establish common user features in systems developed at member institutions, in systems developed jointly by member institutions, and RLG central staff will support similar standards efforts nationwide.

RLG recognizes that direct public access to the RLIN online catalog, if broadly implemented by its member libraries, will lead eventually to an unacceptably large transaction volume. The information gathered from this study will be important background to the development of a plan for distributed computing and a method for accessing a hierarchy of information from local in-process records to union catalog records.

1.2 THE COUNCIL ON LIBRARY RESOURCES INITIATIVE

Against this backdrop, in mid-1980 the Council on Library Resources (CLR) funded a joint study by RLG and OCLC to assess critical issues and problems in designing, developing and operating public online catalogs.[2] Thirty-five organizations known to be operating or developing public access systems were surveyed. An issues paper was prepared that formed the principal agenda item for an August 1980 working session attended by representatives of twenty-five libraries, bibliographic utilities and library networks in the United States and Canada. Participants identified four priority areas for systematic study and cooperative efforts:

1. Analyzing user requirements and behavior
2. Monitoring existing public access systems
3. Developing cost management methods
4. Developing distributed computing and system linkages

Subsequently the Council received proposals to conduct studies of the use and nonuse of public online catalogs. Under the aegis of the Council's Bibliographic Service Development Program these organizations were asked to coordinate their efforts. The outcome was a study of a larger number of online catalogs, user populations and types of libraries than any one organization could support. Cooperation also resulted in the pooling of research and organizational resources and improved communication and cooperation focused on the problems and potentials of public online catalogs. The national study became a coordinated set of five individually funded projects.

1.3 SCOPE AND OBJECTIVES

The study focused on identifying users problems with the human-computer interface and their preferences for improving it. Nonusers were asked to identify barriers to their use of the online catalog. The specific goals of the questionnaire survey were:

1. To produce data and interpretations that enable designers of public online catalogs to improve system interface features. The system interface includes the commands, displays, indexes and similar software- and hardware-related features.

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[2] A full report of this study is in Douglas Ferguson and Neal K. Kaske, Online Public Access to Library Bibliographic Databases: Developments, Issues and Priorities. (Final Report to the Council on Library Resources, September 1980, ED 195 275.

2. To produce data and interpretations that enable libraries to improve the implementation and support services (the organization interface) for public online catalogs.

3. To collect additional data that enable libraries to extend public online catalog services to potential users.

In addition to the questionnaire data, some of the participating organizations collected and analyzed data from staff interviews, from computer transaction tapes, from focused group interviews, and from administrative records. The staff interviews conducted by RLG are reported here but the reader should also consult the reports submitted by the organizations listed on page ii.

1.4 A FRAMEWORK FOR EVALUATING THE USER-INTERFACE

To focus the data collection design a framework was defined that highlighted several elements of the user interface. We assumed that a USER with a QUESTION searches a catalog DATABASE using an INTERFACE that has SYSTEM features and ORGANIZATION features. The interface is whatever is available in the immediate environment of the terminal to assist the user in searching. The system and organization aspects of the interface derive from the fact that user behavior is influenced both by system capabilities and by capabilities provided by the library organization.

The system interface includes commands, messages, displays, and other software features such as indexes. The organization interface includes terminal equipment, the physical setting (such as furniture and lighting), staff assistance, printed aids and educational support (such as orientation or training sessions). Essentially the system interface is everything from the surface of the screen inward and the organization interface is everything from the surface of the screen outward.

This framework enabled us to define a series of questionnaire items that ask for responses in five areas: (1) Questions and purposes users bring to the online catalog, (2) Problems with the system interface, (3) Problems with the organization interface, (4) Preferences for improving the database, system features and organization features, and (5) Demographic (background) characteristics of users.

1.5 DATA COLLECTION APPROACH

Library patrons who have and who have not used the online catalog were asked to complete a self-administered questionnaire.[3] At most participating libraries, users were asked to fill out a printed six-page questionnaire. At the University of California libraries the user questionnaire was administered online to users of University of California's MELVYL online catalog system. Users were selected to complete the questionnaire immediately after using the terminal, and nonusers were selected to complete the questionnaire when they were in the library. User experiences and opinions were solicited about the catalog use just completed, about various features of the online catalog system and library services associated with it, and about suggestions for improving both the system and services. Nonusers were asked their reasons for nonuse and about their perceptions of an online catalog. Comparable demographic information was collected from both users and nonusers.

User and nonuser data were collected during randomly chosen time-blocks of about four hours each, in the morning, afternoon and evening, at library locations where there were terminals. Average sample sizes for each library system are in the range of 500-1500 users and 200-300 nonusers. It is important to note that nonusers were selected from among those who were in the library: this population does not include nonusers of libraries, but is comprised of library users who are not users of the online catalog. This definition of nonusers accomodates resource constraints and permits the study to emphasize a population that is more likely to use the online catalog in the future.

1.6 QUESTIONNAIRE CONTENT AND TESTING

The content of the University of California online User Questionnaire and the printed User Questionnaire was the same. The User Questionnaire consisted of 59 items and the Nonuser Questionnaire consisted of 15 items. The User Questionnaire has four parts including a demographic part. Part One asked ten questions about the use just completed, such as its purpose, satisfaction with search results, amount retrieved and assistance used in searching. Part Two asked twenty-nine questions about problems with system features such as commands, displays and assistance capabilities. Part Three asked five questions about preferences for improving system capabilities, for improving services associated with the catalog (such as signs and brochures), and for improving the database.

The Nonuser Questionnaire had two parts, including a demographic part. Part One consisted of six questions, including the reasons for nonuse, perceptions of time required to learn to use the online catalog and difficulty expected in using the online catalog. The two questionnaires had three substantive questions in common: overall attitude toward the online catalog, likelihood of future use, and a summary comparison of a card (and other print-form) catalog

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[3] Details of the data collection procedures and sampling plan are in a separate report submitted to the Council: David C. Miller and Daphna Baratz, Data Collection Manual and Sampling Plan, Stanford, CA. The Research Libraries Group, Inc. March 1982.

and a computer catalog. In addition, the two questionnaires had several demographic items in common, including frequency of library use, frequency of catalog use, frequency of computer use, age, sex and education. Academic, but not public, library users were asked about academic areas (such as humanities or social sciences), about the focus of their academic work (such as teaching or research), and about academic level (such as freshman/sophomore or graduate student--doctoral level).

Both questionnaires were reviewed at various stages by consultants and librarians. They were pretested at several sites, including Evanston Public Library, the Library of Congress, Northwestern University and Ohio State University in Spring 1981. The test version provided write-in responses for many items, which were analyzed to improve question wording and response (answer) categories. In addition the pretesting involved open-ended and follow-up interviews. After extensive revision the entire survey was pilot tested at almost all participating library systems in Fall 1981.[4] Once again, follow-up interviews were conducted and respondent write-in comments were analyzed. The pilot test data were analyzed and modifications were made to the questionnaires and data collection procedures.

1.7 DATA ANALYSIS AND REPORTING

The printed questionnaires were in machine-scannable form and were completed by filling in response circles for each question. Data from the University of California online questionnaire were transferred under program control to files for subsequent statistical analysis.[5] The printed questionnaires were machine-scanned at RLG and the resulting tapes were transferred to the University of California Division of Library Automation in Berkeley, California where they were processed using programs in the Statistical Package for the Social Sciences (SPSS). Frequency statistics were produced for each library system and selected cross-tabulations and correlations were produced for each participating organization. In addition to this report, separate reports will be submitted to the Council by: J. Matthews and Associates, Inc., Library of Congress, Online Computer Library Center and University of Californial--Office of the Assistant Vice-President for Library Plans and Policies.

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[4] The pilot study version of the user and nonuser questionnaires are in Appendix I and the final version is in Appendix J. A summary of the items in each version is in Appendix B.

[5] Details of the data analysis methodology are in a separate report submitted to the Council: Gary S. Lawrence, Ray R. Larson and Vicki Graham, On-line Catalog Evaluation Project: Data Analysis Plan, Berkeley, CA. University of California Office of the Assistant Vice President--Library Plans and Policies, Version 2.2 August 1982.

Chapter 2

PARTICIPATING LIBRARIES AND SAMPLE SIZES

This chapter discusses the universe of libraries participating in the national study and the RLG and other research libraries on which this report focuses. A full list of participating libraries and the name of the computer catalog system used by each is in Appendix A.

2.1 THIRTY-ONE LIBRARIES PARTICIPATED IN THE STUDY

The thirty-one library systems in the national study included four types of libraries: Research Libraries (ARL members), Other Academic Libraries (Non-ARL members), Community College Libraries, Public Libraries and Federal and State Libraries. Table 1, Table 2 and Table 3 show that about 60% of the user data were collected at research libraries and about half the participating libraries are research libraries. About 25% of the user data were collected at public libraries and the remaining 15% at Other Academic Libraries, Federal and State Libraries and Public Libraries. In the nonuser sample about 40% of the data were collected at Research Libraries, 25% from Public Libraries and about 35% from the remaining types of libraries.

Table 1 lists all 31 participating libraries grouped by type. The grouping reflects the way data has been aggregated for reporting purposes. The Library of Congress is listed separately rather than with the Association of Research Libraries (ARL) group for this reason. In general each organization funded by the Council on Library Resources will report on libraries where it supervised data collection and each will have a somewhat different emphasis. For example, the J. Matthews & Associates, Inc. report will focus primarily on the public and community college libraries and the UC-Division of Library Automation (DLA) will focus on the nine UC campuses where data were collected via an online questionnaire. This report focuses on the RLG libraries with some comparisons to the "Other ARL" group as a whole.

Table 2 shows the number of user questionnaires (N) collected at each type of library and the percentage (%) of all questionnaires collected at each type. Table 3 shows the number of nonuser questionnaires (N) collected at each type of library and the percentage (%) of all questionnaires collected at each type.

TABLE 1

Participating Libraries Grouped by Type

LIBRARY TYPE	NO.
ARL-RESEARCH	15
OTHER ACADEMIC	6
COMMUNITY COLLEGE	2
PUBLIC	4
FEDERAL AND STATE	2
TOTAL LIBRARIES	31

ARL-RESEARCH (15)
DARTMOUTH
NORTHWESTERN UNIVERSITY
OHIO STATE UNIVERSITY
SYRACUSE UNIVERSITY
STANFORD UNIVERSITY
UNIV. OF CALIFORNIA, 9 CAMPUSES
UNIVERSITY OF TEXAS, AUSTIN

OTHER ACADEMIC (6)
STEPHEN F. AUSTIN STATE UNIVERSITY
MANKATO STATE UNIVERSITY
UNIVERSITY OF AKRON
UNIVERSITY OF TEXAS, DALLAS
CLAREMONT COLLEGES
OHIO UNIVERSITY

FEDERAL AND STATE (2)
LIBRARY OF CONGRESS
STATE LIBRARY OF OHIO

COMMUNITY COLLEGE (2)
WEST VALLEY COLLEGE
MISSION COLLEGE

PUBLIC (4)
DALLAS PUBLIC LIBRARY
EVANSTON PUBLIC LIBRARY
IOWA CITY PUBLIC LIBRARY
PIKES PEAK LIBRARY DISTRICT

TABLE 2

User Sample Sizes: By Type of Library

Type of Library	N	%
ARL Libraries	4701	58
Other Academic Libraries	661	08
Community College	155	02
Public Libraries	2047	25
State and Federal	530	07
TOTAL QUESTIONNAIRES ALL LIBRARIES	8094	100

TABLE 3

Nonuser Sample Sizes: By Type of Library

Type of Library	N	%
ARL Libraries	1529	38
Other Academic Libraries	764	19
Community College	228	06
Public Libraries	1076	27
State and Federal	384	10
TOTAL QUESTIONNAIRES ALL LIBRARIES	3981	100

2.2 THIS REPORT FOCUSES ON RLG AND AGGREGATE ARL DATA

Dartmouth, Northwestern and Stanford were the RLG libraries in the study. Data are presented for these three libraries with some comparisons to the other ARL libraries as a group, not including the Library of Congress. Data for the other ARL libraries will be individually reported and interpreted by OCLC and by the University of California Division of Library Automation, which received separate grants to collect that data.

Most tables in succeeding chapters have four columns, one for each RLG library and one labeled "ARL" which is aggregate data for the other ARL libraries. Table 4 shows the user sample size for each RLG and each other ARL library.

Because the Dartmouth system was a prototype with few terminals and the data collection period included an academic vacation, only 41 user questionnaires were collected. The representativeness of this sample is doubtful and therefore conclusions based on the Dartmouth user data should be considered tentative at best. However the Dartmouth nonuser sample size is adequate. Table 5 shows sample sizes for nonuser data.

TABLE 4

User Sample Sizes: RLG and Other ARL Libraries

Research Library	N	%
Dartmouth	41	01
Northwestern	616	13
Stanford	95	02
SUBTOTAL QUESTIONNAIRES RLG	752	16
Ohio State	1247	27
Syracuse	1339	28
Univ. of California*	1259	27
Univ. of Texas-Austin	104	02
SUBTOTAL-OTHER ARL	3949	84
TOTAL QUESTIONNAIRES RLG + OTHER ARL	4701	100

*UC data collected by an online questionnaire at all 9 campuses: Berkeley, Davis, Irvine, Los Angeles, Riverside, San Diego, San Francisco, Santa Barbara and Santa Cruz.

TABLE 5

Nonuser Sample Sizes: RLG and Other ARL Libraries

Research Library	N	%
Dartmouth	232	15
Northwestern	276	18
Stanford	342	22
SUBTOTAL QUESTIONNAIRES RLG	850	56
Ohio State	282	18
Syracuse	294	19
Univ. of California*	000	00
Univ. of Texas-Austin	103	19
SUBTOTAL-OTHER ARL	679	44
TOTAL QUESTIONNAIRES RLG + OTHER ARL	1529	100

*Nonuser data was not collected at UC campuses

2.3 EACH RLG LIBRARY'S COMPUTER CATALOG IS DIFFERENT

The computer catalogs at Dartmouth, Northwestern and Stanford differ in stage of development, number and location of terminals, retrieval features, assistance features and database characteristics. Potentially this enables us to use the data to develop implications for libraries that find themselves in circumstances similar to one of the RLG libraries. It also suggests caution in making comparisons between computer catalogs or in attempting to rate computer catalogs. This caution is emphasized in the next section.

The Dartmouth computer catalog is a pilot version of a system that will be in production in 1983. The Northwestern computer catalog, designated a pilot system, has been available to patrons since mid-1980, so it is virtually a production system. Stanford's use of RLIN as a computer catalog was a trial use during the project period January - May 1982. Therefore the RLG libraries show user responses to a production system, to a pilot system and to a trial system.

At Dartmouth, during the study period, there was one dial-up terminal in the main (Baker) library and one dial-up terminal at each of the following branches: Dana biomedical library, Feldberg business-engineering library and Kresge physics-chemistry library. At Northwestern there are twelve public terminals in the main library and two public terminals in the Science and Engineering Library as well as four terminals at small branch locations where data were not collected.

At Stanford there were two public terminals in the main (Green) library, one terminal in the undergraduate (Meyer) library and one terminal in the Engineering library.

Northwestern has its own computer, Dartmouth dialed up to a computer off-campus and Stanford's terminals were hard-wired to the RLIN processor located on campus. Northwestern experienced continuous computer service during the April - May data collection period, Dartmouth experienced occasional and short-term service interruptions and Stanford experienced an extended service interruption in April when the RLIN processor was not regularly available for a three- to four-week period.

Dartmouth's computer catalog offered retrieval access by author, title and subject heading, including keyword access, as well as access by any other field in the bibliographic record. Northwestern's computer catalog provided searching by author, title and subject heading but did not provide title and subject heading keyword access. RLIN at Stanford provided author, title, and subject heading access but not keyword access to subject headings. RLIN also offered access by call number and other index points. Northwestern's system alone has a circulation capability that the patron may call with a separate command and search by entering an exact call number.

Dartmouth, since it has menu features, has no printed aids but reference staff assistance is available. Northwestern has command lists at each terminal, a descriptive sheet and screens that describe the contents of the catalog and how to do various (e.g author, title) kinds of searching. A staff assistant was stationed at the cluster of eight terminals near the card catalog in the main library. Stanford prepared a short booklet on searching RLIN and also a one page explanation. RLIN has four online screens that describe system changes, names and abbreviations for the indexes, search and display commands and current news about the system. There is a staff assistant at a desk in the main library adjacent to the card catalog and terminals, and reference staff assistance is available near the terminal at each branch location.

The Dartmouth database was a pilot database of books and other materials for 1977-80, consisting of about 150,000 records. Northwestern's database had about 525,000 records including 60,000 serial records. The book records are from 1970 to the present and the serial records represent virtually 100% of the library system's holdings. Stanford's RLIN database consists of about 490,000 book records from about 1971 to the present and about 159,000 serial titles including all current subscriptions since 1971. In addition, the RLIN database is a union catalog that includes well over six million records supplied by RLG member libraries.

These contrasts summarize the main system differences and do not include all detailed differences.* This summary comparison is for the data collection period April - May 1982 and each system is changing with time.

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* For a detailed comparison see Hildreth, Charles R., Online Public Access Catalogs: The User Interface Dublin Ohio, Online Computer Library Center, 1982 (Published version of a Final Report to the Council on Library Resources)

2.4 INTERPRET DATA ACROSS LIBRARIES WITH CARE

This report interprets frequency and cross-tabulated data for each RLG library. It indicates similarities and differences among the data at each RLG library. Once again, the limited size of the Dartmouth user sample should be noted. Aggregate data for the other ARL libraries are used to show trends in uses and assessments (Chapter 3), in preferences for improvements (Chapter 5) and in user and nonuser characteristics (Chapters 6 and 7). The comparison is based on the assumption that the population characteristics are similar at most ARL institutions and are not significantly influenced by the computer catalog features.

Chapter 4 interprets the items on features of the individual online catalogs that caused problems for respective user groups. Interpretations of aggregate ARL data for perceived problems are extremely limited. There is no "ARL computer catalog" there are several catalogs. At best we can identify problems that occur at each RLG library and if that problem is highly ranked in the ARL data we can make a weak inference that this is a common problem feature across systems. Keep this caution in mind as you read the data and interpretations on perceived problems.

2.5 SUMMARY

This report summarizes and interprets frequency and cross-tabulated data from three RLG libraries, (Dartmouth, Northwestern and Stanford), that participated in the national study of public online catalogs at 31 library systems. Response data is given for each RLG library and in some cases, is contrasted with aggregate data from the twelve other ARL libraries in the study. Each RLG library has a different computer catalog that varies in number and distribution of terminals, in retrieval software characteristics, in assistance features and in database size and scope. Therefore care should be exercised in making detailed comparisons between systems.

Chapter 3

USES AND ASSESSMENTS

Users were asked in two questions (9 and 10) to give their general impressions of computer catalogs. They also reported how satisfied they were with their most recent search (Question 6), and specifically how fully the search result met or exceeded their expectations (Questions 5 and 7).

Users reported also on the characteristics and context of their searches including why they sought information from the computer catalog (Question 4), what information they sought (Question 2), what search information they brought, and what information they actually used in making their search (Questions 1 and 3).

The circumstances of the particular search queries were investigated in several questions. Users told us how they learned of the computer catalog's existence (Question 52), how they learned to use it (Question 53), and where, if anywhere, they secured help in carrying out their search (Question 8).

The tabulated data bearing on these points, with comments where appropriate, are reported in this chapter.

A NOTE ON THE TABLES IN CHAPTERS 3, 4, 5, 6 AND 7

1. Each table shows four columns of data labeled ARL, NOR, STA, DAR.
   ARL=ARL libraries minus the 3 RLG libraries. USER N=3949 NONUSER N=679
   NOR=Northwestern University. USER N=616, NONUSER N=276
   STA=Stanford University. USER N=95, NONUSER N=342
   DAR=Dartmouth College. USER N=41, NONUSER N=232
   (See also the tables in Chapter 2)

2. SPSS (Statistical Package for the Social Sciences) reports for each table are in the appendix for each chapter. The reports give actual number of responses, percentages, missing values etc.

3. The tables show percent of responses not respondents. Percents have been rounded up, thus 7.5% becomes 8% and 7.4% becomes 7. Because of rounding each column may not total exactly 100%.

3.1 USERS ASSESSMENTS

3.1.1 Users enthusiastic about computer catalogs

Computer catalogs favorably impress those patrons who try them. The finding holds for all user groups, library types, and computer catalog types surveyed, whether the computer catalog is judged independently or compared with conventional catalogs. The findings for all research libraries and for each of the libraries surveyed by RLG are reported in Table 6 .

TABLE 6

Users Opinion of Computer Catalogs

ATTITUDE TO COMPUTER CATALOG

	ARL%	NOR%	STA%	DAR%
Very Favorable	68	72	46	51
Some Favorable	26	24	37	24
Some Unfavorable	05	03	14	20
Very Unfavorable	02	01	03	05

"MY OVERALL/GENERAL ATTITUDE
TOWARD THE COMPUTER CATALOG IS:"
(Users Question 9)

COMPUTER VS. MANUAL CATALOG

	ARL%	NOR%	STA%	DAR%
Better	74	80	49	39
Same	17	14	23	30
Worse	09	07	28	30
Uncertain	00	05	00	00

"COMPARED TO THE CARD, BOOK, OR MICROFICHE CATALOG IN THIS
LIBRARY, THE COMPUTER CATALOG IS:"
(Users Question 10)

3.1.2 Users substantially satisfied

Generally favorable user opinion about computer catalogs depends at least in part on the outcome of searches. Users in ARL, Northwestern, Stanford, and Dartmouth samples all reported at least some satisfaction with the results of the particular searches surveyed. Overall (ARL), of the four satisfaction categories presented, users selected the most favorable category more than any other, while 75% reported at least some satisfaction. These results are reported in Table 7 .

TABLE 7

Users Level of Satisfaction With Search Results

HOW SATISFACTORY THE SEARCH RESULT WAS:

	ARL%	NOR%	STA%	DAR%
Very Satisfactory	42	55	33	27
Somewhat Satisfactory	34	32	43	27
Somewhat Unsatisfactory	12	07	15	24
Very Unsatisfactory	12	06	10	22

"IN RELATION TO WHAT I WAS LOOKING FOR,
THIS COMPUTER SEARCH WAS:" (Users Question 6)

The flat distribution of Dartmouth users among the four categories is notable, in part reflecting sample size. The extent of satisfaction in the Northwestern sample probably reflects a combination of a relatively mature system and an experienced user base.

3.1.3 Users find what they seek, sometimes more

Overall, about half of all users in the search surveyed found all or more than they sought, including useful items they had not thought to look for. Another 40% found at least something of value related to their search, while only about 20% to 40% found nothing. These results can be interpreted in either of two ways, and probably reflect a mixture of two cases: Either the computer catalog effectively delivered the goods, or the users had uncertain or rather circumscribed expectations about the outcome. The tabular results are given in Table 8 .

TABLE 8

What Users Find in the Computer Catalog

HOW MUCH OF WHAT I EXPECTED:

	ARL%	NOR%	STA%	DAR%
All/More	15	11	16	12
All	25	38	24	12
Some	40	40	46	39
Nothing	20	11	14	37

"IN THIS COMPUTER SEARCH I FOUND:"
(Users Question 5)

"I CAME ACROSS THINGS OF INTEREST OTHER THAN WHAT I WAS LOOKING FOR:"
(Users Question 7)

UNEXPECTED AND USEFUL RESULTS?

	ARL%	NOR%	STA%	DAR%
Yes	46	38	49	44
No	54	62	51	56

3.2 SEARCH CHARACTERISTICS

As might be expected in a sample composed extensively of undergraduate students, most users in the sample sought coursework-related information. Their search objectives most often were specific, and they brought with them specific search information. They may well have most often searched only with the terms they brought: the data are consistent with this inference but cannot confirm it because no specific question was asked about search terms found during the search. The tabulated details of these findings are given in the following sections. Note: Respondents were instructed to "MARK ALL THAT APPLY" for each question in this section, so the percentages are percent of responses, not percent of respondents.

3.2.1 Users search objectives are coursework-related

Combining papers, reports, and readings assigned by an instructor or required for a course, a range of 35% to 45% of users in all four samples came to the computer catalog in search of course- related information. Aside from that, the other popular objective across samples was "personal interest," in some senses a catchall category. The small number of faculty in our samples is evident in the 0-4% response to "teaching or planning a course." The results are tabulated in Table 9 .

TABLE 9

Users Search Objectives

INFORMATION WAS SOUGHT FOR:	ARL%	NOR%	STA%	DAR%
A course paper or report	26	27	21	26
Class or course reading	19	20	13	11
Personal interest	13	10	13	21
My work or job	09	10	11	13
Recreational uses	07	06	08	10
A thesis or dissertation	07	10	15	04
Writing for publication	04	07	06	03
A hobby	04	01	03	00
Teaching or planning a course	03	03	04	00
Making or fixing something	01	00	00	00

"I NEED THIS INFORMATION FOR:" (Users Question 4)

3.2.2 Users are searching for specific information

Except for Dartmouth, 35% to 40% of our users were looking for a specific item, presumably often assigned or required by an undergraduate instructor. Again, except for Dartmouth, another 25% to 30% of users came in search of information about a specific subject. Only about half as often (15%-19%) did they need to find a book by a specific author or item-status information. Rarely (2%-4%) did they need to check a reference or citation. These results are tabulated in Table 10 . Dartmouth users differ notably from the overall sample (ARL), and from Northwestern and Stanford users as well, in that they twice as often were looking for topic-specific information, but less often for specific items and item-status information. Because of the small sample, there is no assurance that this is representative of Dartmouth users.

TABLE 10

The Type of Information Users Seek

TYPE OF INFORMATION SOUGHT:	ARL%	NOR%	STA%	DAR%
A specific book, journal or magazine	33	39	36	21
Books, journals or magazines on a topic or subject	32	26	27	57
Books by a specific author	16	16	15	19
If a book that I know the library has is available for my use	11	15	07	02
Another library that has a book, journal or magazine that I want	04	01	11	00
Information such as publisher, date, spelling of a name, etc.	03	03	04	02

"BY SEARCHING THIS COMPUTER CATALOG I WAS TRYING TO FIND:" (Users question 2)

3.2.3 Users bring specific search terms

Again presumably reflecting their intensively coursework-related objectives, most users brought to their search specific and relatively complete search information. Combining the "complete" choices (author, subject heading, title), nearly 70% of ARL users brought at least one complete search term, a percentage closely matched in our other three samples (61% to 69%). Few came with any call-number information, while 10% to 20% brought one or more topic words. The results are given in Table 11 .

TABLE 11

Search Information Users Bring To Computer Catalogs

INFORMATION BROUGHT:	ARL%	NOR%	STA%	DAR%
A complete author's name	24	26	27	19
A subject heading or headings	22	17	15	36
A complete title	22	26	19	13
A topic word or words	15	09	12	20
Part of an author's name	08	08	14	05
Part of a title	06	09	11	08
A complete call number	03	05	01	00
Part of a call number	01	00	01	00

"I CAME TO THIS COMPUTER SEARCH WITH:" (Users Question 1)

3.2.4 Users search with the information they bring

In all samples, the user percentage distribution for search information brought to the catalog tracks the distribution for search information actually used. The resemblance suggests that users either do not feel a need to seek or do not get assistance from the catalog in finding further search terms. The inference is plausible, but cannot be finally determined from the data. A range of 50% to 70% of users in all samples brought and searched by one or all of three items: complete author, subject heading, and complete title. If topic words are added, the range is extended to 67%-83%. The details are given in Table 12 .

TABLE 12

Search Information Used By Computer Catalog Users

	BROUGHT:				SEARCHED BY:			
	ARL%	NOR%	STA%	DAR%	ARL%	NOR%	STA%	DAR%
Complete author	24	26	27	19	22	23	24	16
Subject heading	22	17	15	36	22	17	16	30
Complete title	22	26	19	13	20	22	14	09
Topic word(s)	15	09	12	20	15	10	13	24
Part author	08	08	14	05	10	11	17	10
Part title	06	09	11	08	09	10	13	13
Complete call no.	03	05	01	00	03	08	01	00
Part call no.	01	00	01	00	00	00	01	00

"I CAME TO THIS COMPUTER SEARCH WITH:"
(Users Question 1)

"I SEARCHED FOR WHAT I WANTED BY:"
(Users Question 3)

3.3 CIRCUMSTANCES OF USE

By their own account, computer catalog users largely learned of the catalog's accessibility by seeing it during a trip to the library, and in general both learned to use the catalog and made the particular search surveyed with little or no personal assistance from library staff or anyone else. Note: Respondents were instructed to "MARK ALL THAT APPLY" for each question in this section, so the percentages are percent of responses, not percent of respondents.

3.3.1 Users discovered the computer catalog for themselves

To the extent that any of the libraries in our sample made an organized effort to alert prospective users to the computer catalog's availability, the efforts were unsuccessful insofar as our users' recollections and reports can be relied upon. Across all four samples, 60% to 80% of the users stated that they first learned about the computer catalog by noticing a terminal in the library. The next best source (3% to 16%) was a library tour, orientation or demonstration. Except at Dartmouth, no other source was cited by more than 8% of those users who responded to this question. Details are given in Table 13 .

TABLE 13

How Users Discover the Computer Catalog

	ARL%	NOR%	STA%	DAR%
Noticing a terminal in the library	66	73	82	58
Library tour, orientation or demonstration	13	16	04	03
An article or written announcement	03	02	00	05
A course instructor	05	01	00	03
A friend or family member	08	05	07	13
Library staff	06	03	08	20

"I FIRST HEARD ABOUT THIS COMPUTER CATALOG FROM:"
(Users Question 52)

Looking at the preceding table, note once again that the Dartmouth users report a different experience. At Dartmouth, library staff were much more significant in bringing the computer catalog to the attention of prospective users.

3.3.2 Users taught themselves to use the computer catalog

Learning to use a computer catalog was largely perceived by our users as a "do-it-yourself" experience. Only 18% to 38% of all users across samples reported any learning assistance from ANY personal source: library staff, course or orientation, friend, or even from someone working at a terminal nearby. Most (45% to 68%) reported that they learned to use the catalog either from printed instructions on or near the terminal or from instructions and prompts given on the catalog terminal. Tabulations are given in Table 14 .

TABLE 14

How Users Learn to Use the Computer Catalog

	ARL%	NOR%	STA%	DAR%
Using printed instructions	37	17	46	20
Using instructions on the terminal screen	21	42	07	25
By myself without any help	14	16	08	16
From the library staff	14	16	08	16
From a friend or someone at a nearby terminal	10	19	06	11
From a library course or orientation	05	03	04	00

"I LEARNED HOW TO USE THIS COMPUTER CATALOG:"
(Users Question 53)

3.3.3 Users received little help

This topic affords a clear cautionary illustration of the care which must be taken in interpreting survey research data. Users were sampled after they had completed a search. They necessarily therefore got some minimal assistance, at least to the extent that screen menus or other prompts had to be presented and responded to in interacting with the catalog. Despite this fact, 35% of all Northwestern and 28% of all ARL users reported that "I did not get help." Perhaps respondent recollections were faulty. Or perhaps in their willingness to concede that help was needed and given, or in their definition of what constitutes "help"--on such points, at least, there must have been some confusion or miscommunication between the questionnaire and the respondent. Results are tabulated in Table 15 .

TABLE 15

Users Sources of Assistance During a Search

	ARL%	NOR%	STA%	DAR%
Printed material or signs	33	11	55	18
Instructions on the terminal screen	26	45	08	34
Library staff member	09	08	25	24
Person nearby	04	02	02	10
I did not get help	28	35	10	15

"I GOT HELP IN DOING THIS COMPUTER CATALOG SEARCH FROM :"
(Users Question 8)

3.4 SUMMARY

Computer catalogs favorably impress those patrons who try them. This opinion depends at least in part on the outcome of particular searches. In all samples, most users reported at least some satisfaction with the results of the particular searches surveyed. About half of all users found all or more than they sought, including useful items they had not thought to look for. Another 40% found at least something of value related to their search, while only about 20% to 40% found nothing.

Overall, our users were looking for a specific item, presumably often assigned or required by an instructor. Most users brought to their search specific and relatively complete search information. Combining the "complete" choices

(author, subject heading, title), nearly 70% of ARL users brought at least one complete search term. Users apparently search with the information they bring to the computer catalog, although it may be that they obtain and use other search terms from the catalog. By their report, they largely learned of the catalog's accessibility by seeing it during a trip to the library, and in general both learned to use the catalog and made the particular search surveyed with little or no personal assistance from library staff or anyone else. A range of 50% to 70% of users in all samples brought and searched by one or all of three items: complete author, subject heading, and complete title. If topic words are added, the range is extended to 67%-83%. To the extent that any of the libraries in our sample made an organized effort to alert prospective users to the computer catalog's availability, the efforts were unsuccessful insofar as our users' recollections and reports can be relied upon. Across all four samples, 60% to 80% of the users stated that they first learned about the computer catalog by noticing a terminal in the library. The next best source (3% to 16%) was a library tour, orientation or demonstration. Except at Dartmouth, no other source was cited by more than 8% of those users who responded to this question.

Chapter 4

PERCEIVED PROBLEMS

This chapter reports and interprets data on problems users experienced with the software interface (e.g. retrieval features), with the organisation interface (e.g. library support services) and with the terminal environment (e.g. human factor aspects). Problems with retrieval features and with library services were tapped by using a five point agree-disagree scale with a "does not apply" choice. For example, users responded to a statement such as "Displayed messages are too long" by marking Strongly Agree, Agree, Neither Agree or Disagree, Disagree, Strongly Disagree or Does Not Apply.

Problems with the terminal environment were tapped by a single question (Number 43) that asked for a yes or no response to eight statements such as "Nearby noise is distracting." There were 28 scaled questions about retrieval features (Numbers 11-38) and four questions about library service (Numbers 39-42). The questions on retrieval and service were alternated in a positive and negative form to minimise bias. For example, the first three questions are: "A computer search by title is difficult," "A computer search by author is easy," and "A computer search by subject is difficult." The respondent had to think about whether to agree or disagree with each statement. Sometimes agreement meant a problem and sometimes it did not. These questions were extensively pretested.

4.1 SUBJECT ACCESS IS A KEY RETRIEVAL FEATURE PROBLEM

Table 16 shows considerable diversity in the highly ranked problem features at each RLG library and in the other ARL aggregate. Only the problem of finding the correct subject term appears in the top five at each RLG library and in the other ARL group. The Northwestern ranking is similar to the ARL group ranking. At Stanford response time is by far the highest ranked problem, which is understandable in light of the serious computer service problems that occurred during the data collection period. At Dartmouth difficulty in scanning a set of search results is by far the highest ranked problem.

TABLE 16

Highly Ranked Retrieval Feature Problems

	APL		NOR		STA		DAR	
	R	%	R	%	R	%	R	%
Increasing a search result	1	(54)	2	(62)	4.5	(36)	3	(68)
Finding correct subject term	2	(66)	1	(66)	2	(68)	5	(64)
Subject heading search	3	(32)	3	(39)	6	(62)	10	(35)
Scanning a long search result	4	(30)	6	(29)	4.5	(36)	1	(60)
Understanding truncation	5	(28)	7	(26)	26	(14)	7	(60)
Response time too slow	12	(22)	5.5	(27)	1	(77)	6	(65)
Finding call num. on screen	18	(14)	27	(08)	3	(66)	23	(17)
Availability of signs	14	(20)	12	(21)	13	(32)	2	(56)

4.2 KNOWLEDGE OF THE DATABASE IS A KEY SERVICE PROBLEM

Table 17 shows rankings for the five library service problems. Knowing what kinds of material are in the computer catalog is a highly ranked problem at each RLG library and in the ARL group. The helpfulness of staff advice is the lowest ranked problem at each RLG library. The availability of signs and brochures also seems to be a problem at each RLG library and this may partly explain why users are unclear about what kind of material is in the computer catalog.
At Dartmouth the availability of signs and brochures is by far the highest ranked library service problem while at Stanford the usefulness of signs and brochures is the highest ranked problem. About 25% of respondents at each RLG library and in the ARL group have trouble finding a free terminal. This confirms the data in the following chapter that shows an increase in the number of terminals as a highly desired improvement at almost all ARL libraries.

TABLE 17

Highly Ranked Library Service Problems

	ARLS	WORS	STAS	CARS
Knowing what is in the database	37	27	33	25
Availability of signs/brochures	20	21	32	16
Usefulness of signs/brochures	12	13	62	21
Helpfulness of staff advice	13	12	06	06
Finding a free terminal	27	23	20	20

4.3 THE TERMINAL TABLE IS A KEY ENVIRONMENT PROBLEM

Table 18 shows rankings for the seven terminal environment factors. Only table height and adequacy of writing space appear to be a significant problems at each RLG library and for the ARL group.

TABLE 18

Highly Ranked Terminal Environment Problems

	ARLS	WORS	STAS	CARS
Terminal table height	82	86	91	100
Writing space	37	41	20	16
Letter/number readability	15	09	15	08
Noise level	11	09	11	08
Terminal keyboard	09	13	20	08
Lighting level	09	05	08	08
Too much glare on screen	08	07	08	00

4.4 DISPLAYING A DISTRIBUTION OF PROBLEMS

In this section we illustrate a way in which a libray may display its data to identify "clusters" of problems that bother certain percentages of users. A feature is a problem for a respondent if they "Strongly Agree" or "Agree" with a statement that using that feature is difficult or conversely if the "Strongly Disagree" or "Disagree" that the feature is easy to use. In the following analysis the strongly agree and agree responses were combined and the strongly disagree and disagree responses were combined. A subsequent analysis might highlight those features that were linked with only "strong" responses.

If we look at the number of features rated as problematic for 10%, 20%, 30% etc. in each computer catalog the result provides a problem distribution profile for that catalog. It does not give a rank order of problematic features for each computer catalog. In this section a problem profile is developed for each RLG catalog. In the following sections problem rankings are given for each RLG computer catalog.

A feature may be called "problematic" if a certain percentage of people see a problem with it. However, if the distribution of problems shows that a large number of features were considered problematic, then one can use the median of each distribution to determine whether for instance, 25% indicates a serious problem or a less serious problem.

In Table 19, the distributions for Stanford and Dartmouth are clearly different from the other distributions. At Stanford and Dartmouth, there are twelve to thirteen features that were marked by more than 31% of the users as problematic (compared to only three features at Northwestern and four features for the other ARL group).

To determine which feature "causes a problem", in the ARL distribution we took the first five (most frequently mentioned) features and, in case of differences between the distributions we added the features that were ranked toward the top of each distribution. Table 19 presents the distribution of the features according to the percent of users who marked them as "problematic features". Once again, this shows a way to display the data for an individual computer catalog system and it is not a way to compare or rate computer catalogs.

TABLE 19

Problem Features Ranked by a Given Percent of Users

ARL

Range(%)	01-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80
N. of features	3	11	9	2	1	1	-0-	-0-

Northwestern

Range(%)	01-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80
N. of features	9	11	9	1	2	-0-	-0-	-0-

Stanford

Range(%)	01-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80
N. of features	5	10	4	8	4	-0-	-0-	1

DAR

Range(%)	01-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80
N. of features	4	10	6	5	4	3	-0-	-0-

4.5 SUMMARY

Users seem to experience the most problems with software features relating to subject searching, thus increasing a search result, finding correct subject terms and doing a subject heading search are highly rated as problems. Knowing the content of the database, finding a free terminal and the availability of signs and brochures are library service problems to users. In the physical environment of the terminal, table height and writing space are the two most highly rated physical environment factors. About one-fourth of users in each sample experienced problems in finding an available terminal.

Chapter 5

PREFERENCES FOR IMPROVEMENT

This chapter summarizes improvements that users identified by selecting from a list in each of three questions. Each question focused on a different area of improvement: the software, organization support and the database. Question 44 listed software improvements such as searching by a title word or limiting a search by language. Question 45 listed organization service improvements such as a manual for purchase or terminals in locations other than the library. Question 46 listed database improvements such as dissertations, technical reports or more of the libraries' older books. Some improvements do not fit neatly into one of the three categories of software, organization service or database. An example is a printing capability which depends just as much on software enchancements as on the library's ability to support the cost of printers. For the exact wording of the question and responses see the User Questionnaire in Appendix J.

Users were asked to select four responses from each of the three "improvement" questions. The list of alternatives in each question was created from interviews with users during the early design phase, from staff review in each participating organization and from analyzing respondent write-in comments during the pretest and pilot test. Hence each list is not exhaustive but represents a combination of alternatives supplied by the population and by professional judgement. The response frequencies and rankings for each question discussed in this chapter can be found in Appendix E.

5.1 SOFTWARE IMPROVEMENTS

Users were asked to select from a list of fifteen "additional features" they would like the computer catalog to have, including the alternative "none." Less than 1% selected "none" in the ARL sample and at each RLG library.

5.1.1 Users want better subject access

Two features were ranked in the top five in the ARL sample and at Northwestern, Stanford and Dartmouth: 1) ability to view a list of words related to the respondent's search words, and 2) the ability to search a book's table of contents, summary or index. The first capability suggests patron interest in more in-depth access to the content of books and the second suggests patron interest in assistance in formulating a better subject search.

TABLE 20

Desired Software Improvements

ARL Rank		ARL%	NOR%	STA%	DAR%
1.	View words related to my search words	15	13	10	13
2.	Search table of contents/summary/index	14	15	11	09
3.	Print search results	09	10	11	13
4.	Know if book is checked out	08	05	13	12
5.	Search by subject heading words	08	11	08	09
6.	Search by journal abbreviations	08	08	08	05
7.	Search for illustrations/bibliographies	06	05	05	03
8.	Step by step instructions	06	04	14	07
9.	Limit result by language	05	03	02	05
10.	Search by title word	05	08	05	04
11.	Location of book in library	04	06	06	08
12.	Limit result by date	04	05	04	07
13.	Change display order	04	02	02	03
14.	Search by call number	03	04	03	02
15.	None	02	01	00	01

"SELECT UP TO FOUR ADDITIONAL FEATURES YOU WOULD LIKE THIS COMPUTER CATALOG TO HAVE:" (Users question 44).

Printing capabilities and circulation status information were high priorities at Dartmouth and Stanford, where the computer catalogs do not have those features. Northwestern, for example, has circulation status information that can be used by calling a separate system (LCUS) so this capability was ranked lower by the Northwestern sample.

Step-by-step instructions were the highest ranked improvement at Stanford whose system was new to the library and had few built-in guidance features. Searching by subject heading words was ranked fourth at Northwestern where searching by the whole subject heading was a relatively new feature and keyword retrieval was not included.

The highest ranked alternative in the software improvement question was answered by no more than 15% of the sample and the lowest ranked feature by about 1%. Table 20 shows the percent of responses ranked by the preferences of the ARL group.

5.2 SERVICE IMPROVEMENTS

Users were asked to select from a list of nine "service improvements" that are not primarily a matter of software. This question showed the largest range of responses from a low of 4% to to a high of 24%.

5.2.1 Users want improved terminal access

More terminals everywhere seems to be what users want at most if not all ARL libraries. The alternatives "more terminals," "more terminals at locations other than the card catalog," and "terminals at places other than library buildings" are the highest ranked at each RLG library and in the ARL sample. The response categories on terminals were the highest ranked of any suggested improvement in all three "improvement" questions. On the whole about one-quarter of the respondents at ARL and RLG libraries want more terminals. This is cross-validated by the responses to question 42, where about 20% of respondents at ARL and RLG libraries say they agree or strongly agree with the statement that "It is hard to find a free terminal."

Table 21 shows the percent of responses ranked by the preferences of the ARL group.

TABLE 21

Desired Service Improvements

ARL Rank	ARL%	NOR%	STA%	DAR%
1.More terminals	22	23	28	21
2.Terminals outside library buildings	19	20	13	14
3.Terminals in non-card catalog locations	17	28	16	14
4.Chart of commands at terminals	13	08	19	15
5.Manual at the terminal	09	06	07	18
6.None	07	07	05	03
7.Training sessions	05	03	08	09
8.A/V training program	04	02	03	03
9.Manual for purchase	03	02	03	02

"SELECT UP TO FOUR COMPUTER CATALOG SERVICE IMPROVEMENTS YOU WOULD LIKE THE LIBRARY TO MAKE:" (Users question 45).

The other service improvement alternatives were for printed aids and training. The responses varied. At Stanford a chart of commands was ranked second (19% of respondents) but this was ranked in the middle range by the ARL group as a whole, suggesting that most libraries in the sample have visible charts posted at the terminal. Dartmouth users ranked a chart of commands and a manual at the terminal second and third, suggesting a desire by users to master the extensive command capability of the Dartmouth computer catalog. The relatively higher interest in training sessions at Dartmouth and Stanford, compared with Northwestern, reflects the long time exposure of Northwestern users and the extensive training done by the library staff in the past two years. The highest ranked alternative in the service improvement question was answered by 28% of the sample and the lowest ranked response by about 2%.

5.3 DATABASE IMPROVEMENTS

Users were asked to select from a list of eleven types of material four types they "would like to see added to the computer catalog." Two other response categories were provided: "none," answered by 3% and "other," answered by less than 1%. The alternatives were typical book and nonbook material found in most libraries and also "More of the library's older books."

5.3.1 Users want more of the library's books in the database

Table 22 shows that "More of the library's older books" tended to be ranked highly at each RLG library and by the ARL group. Films, music scores, manuscripts and maps were ranked fairly low at RLG and ARL libraries. Table 22 shows the percent of responses ranked by the preferences of the ARL group.

TABLE 22

Desired Database Improvements

ARL Rank		ARL%	NOR%	STA%	DAR%
1.	Government publications	15	13	12	12
2.	More older books	14	19	20	16
3.	Newspapers	13	10	10	19
4.	Dissertations	10	14	16	07
5.	Records or tapes	08	05	03	06
6.	Technical reports	08	05	06	06
7.	Journal titles	07	15	17	23
8.	Motion picture films	06	05	05	04
9.	Music scores	04	04	02	02
10.	Manuscripts	04	03	04	03
11.	Maps	06	03	02	02
12.	None	04	03	02	02
13.	Other	01	01	00	00

"SELECT UP TO FOUR KINDS OF MATERIAL YOU WOULD LIKE TO SEE ADDED TO THE COMPUTER CATALOG:" (Users question 46)

Stanford and Northwestern users ranked journal titles, dissertations and government publications as second, third, and fourth behind older books. This is interesting since Northwestern is probably the only research library that has

virtually 100% of its serial titles in its computer catalog. Northwestern users may not be aware of this fact. Dartmouth users ranked journal titles and newspapers as first and second ahead of older books.

5.6 SUMMARY

Preferences for improvements expressed by computer catalog users are reported under three categories: software (Table 20), service (Table 21), and database (Table 22).

Regarding software improvements desired (Table 20), no choice was mentioned more often than 15% of the time. Across all samples, the improvements desired most were: the ability to view words related to selected search words, and the ability to search tables of contents, summaries, and indexes. Printing capabilities and circulation status reporting were high priorities at Stanford and Dartmouth (where neither feature is offered), but circulation status reporting was of lesser importance at Northwestern, where this feature is already provided. Step-by-step instructions were rated highly at Stanford, where the system had been newly installed.

Regarding service improvements desired (Table 21), the highest single response was given 28% of the time. A desire for more terminals is the first preference by a substantial margin, with roughly one-quarter of respondents in all samples including that choice, with votes for terminals beyond the card catalog area and even outside the library also being popular. Cross-validation of this response is found in Table 17, where approximately the same percentage of respondents report that finding a free terminal is a problem. Other service preferences varied from one sample to another, probably depending on what is now provided and/or how long the system has been available for users to master. System command charts and manuals and training sessions were popular choices.

Regarding database improvements desired (Table 22), the single greatest response was selected by 30% of all respondents. Across samples, the database addition most desired was older books, with a response percentage range of 16% to 30%. Other highly rated selections included government publications, dissertations, journal titles, and newspapers, while films, scores, manuscripts, and maps ranked near the bottom.

Chapter 6

USER CHARACTERISTICS

Users reported on their use of library and other computer resources (Questions 48, 49, 50, and 51). They also reported their academic status (Question 59), academic focus (Question 58), academic area (Question 57), and their age (Question 54), sex (Question 55), and education level (Question 56). Comparable data was gathered for nonusers and is reported in the next chapter. User data on these points is reported here, with comments as appropriate.

6.1 USERS INFORMATION BEHAVIOR

Users reported how often they visit the library (Question 48), how often they use the card or other manual catalogs (Question 50), and how often they use the computer catalog (Question 49). The results are as follows:

6.1.1 Most computer catalog users visit the library often

Computer catalog use is strongly correlated with frequent visits to the library. Across the four samples, 76% to 86% of all users reported that they visit the library either daily or weekly. In contrast, only 2% or 3% were first-time library visitors while only 8% to 13% estimated that they used the library no more than once a month. Overall, distribution of responses across samples was very uniform. Tabulations appear in Table 23 .

TABLE 33

Users Library Use

	ADLS	NORS	STAS	DAMS
Daily	36	39	44	36
Weekly	43	43	32	48
Daily/Weekly Subtotal	79	82	76	84
Monthly	12	11	13	08
About four times a year	05	04	05	03
About once a year	03	03	03	03
Not before today	02	00	03	02

"I COME TO THIS LIBRARY:" (Users Question 69)

6.1.3 Frequent catalog users prefer computer to manual catalog

On this point, the data hint, although they do not establish, that building computer catalog use requires well-established systems in either or both of two dimensions: scope and sophistication on the one hand, and some period of simply "being there" on the other. Looking at Table 34 following, ADL and Northwestern users consult the computer catalog on most visits to the library, while Stanford users do so only about 25% of the time and Dartmouth users do so only 5% of the time. This is illuminating, when we know that the Dartmouth system is a modest pilot effort and the Stanford system was newly available to users during the sampling period, while the Northwestern system is relatively comprehensive and has been accessible to users for some time, in those respects resembling other large systems in the ADL sample.

If computer catalog use increases slowly, manual catalog use correspondingly declines slowly. Looking at Table 35 following, across samples about 33% to 60% of our computer catalog users also consult manual catalogs in every or almost every visit to the library. The data do not establish that users consult both catalogs in a search for the same information. Certainly in an unknown number of cases, users consult manual catalogs for information they know or suspect from prior experience will not be found in the computer catalog. The data hint that those groups who use the computer catalog more resort less often to the manual catalog and vice versa. Remembering that users most often are searching for specific items or at least information about particular topics, it is plausible (although not established by this data) to believe that users may check the computer catalog first, then move on to the manual catalog if they do not find what or all they desire.

TABLE 34

Users Computer Catalog Use

	[illegible]	[illegible]	[illegible]	[illegible]
Every library visit	14	13	04	07
Almost every visit	07	09	10	05
Subtotal	20	22	13	12
Occasionally	33	35	37	33
Rarely	19	24	16	23
Not before today	28	20	35	42

"I USE THIS COMPUTER CATALOG:" (Users Question 60)

TABLE 35

Users Card Catalog Use

	[illegible]	[illegible]	[illegible]	[illegible]
Every visit	11	06	14	17
Almost every	21	15	19	15
Subtotal	32	21	33	32
Occasionally	30	34	37	43
Rarely	23	28	15	15
Never	15	17	17	10

"I USE THIS LIBRARY'S BOOK, CARD OR MICROFILM CATALOG:
(Users Question 59)

6.1.3 Users employ other computers relatively less often

Excepting Dartmouth, computer catalog users in the BRL, Northwestern, and Stanford samples make daily or at least weekly use of computers other than the computer catalog about 20% to 25% of the time. This compares with about 30% to 40% of the users who consult the computer catalog at least nearly every time they come to the library (see preceding tabulation), and 70% to 80% of users report that they visit the library at least nearly every week. Taken together, these data may imply that by choice or by necessity, computer catalog users consult the catalog much more often than they employ all other computers for all other purposes. To the extent this is true, it seems a perhaps natural presumption that those who are more oriented towards computer usage generally should be likely to be above-average users of computer catalogs. The data are tabulated in Table 20 .

Table 20

Users Other Computer Use

	BRL	NORTH	STAN	UNTD
Daily	13	07	13	09
Weekly	10	14	09	10
Daily/Weekly Subtotal	23	20	22	19
Monthly	13	16	16	09
About four times a year	17	14	11	13
About once a year	09	11	04	05
Never	38	39	30	07

[Use a computer system other than
the library's computer catalog? (Users Question 5)]

A comment on the Dartmouth data, where computer catalog users almost twice as often reported that they use other computers daily or weekly: On the one hand, Dartmouth has earned a well-deserved place in educational history by being among the first to institutionalize "computer literacy" (the BASIC programming language originated there). On the other hand, the Dartmouth computer catalog is a poor effort, in that its usage is not comparable to older or more comprehensive catalogs.

4.3 USERS ACADEMIC STATUS AND AFFILIATION

Users were asked three questions about their academic background: their academic status (Question 16), the focus of their academic work, such as teaching or research (Question 18), and their academic area, such as social sciences engineering (Question 17). Identical questions were asked of nonusers and are tabulated in the next chapter for those who wish to make comparisons. Overall, the data apparently do not imply that the users are in any way un-representative of the student population (faculty and staff comprise only a small percentage of the sample).

4.3.1 Users are students; Undergraduates 33%, graduates 30%

A range of 27% to 67% of users are undergraduate students. The graduate student range is more significant--3% (Dartmouth) to 43% (Stanford). Other categories--faculty, staff, and "other"--are conspicuous by their absence. Data are given in Table 4[7].

TABLE 4[7]

Users Academic Status

	MELVYL	BIOS	DIALOG	INFO TRAC
Freshman-sophomore	13	23	14	40
Junior-senior	35	20	33	24
Undergraduate Subtotal	48	43	47	64
Graduate: Masters	14	10	17	10
Graduate - Doctoral	14	14	10	11
Graduate - professional	23	14	21	15
Graduate Subtotal	51	38	52	32
Faculty	14	05	11	04
Staff	14	01	04	17
Other	23	13	11	04

[a] Account affiliation with this college or university [b] (Users Question 16)

6.3.3 [illegible]

Reinforcing findings reported earlier in this chapter, the academic focus of most users in all samples is on course work, by a range of 67% to 81%, versus a combined range of 9% to 27% for teaching and/or research. Results are given in Table 10 .

TABLE 10

Users Academic Focus

	[illegible]	[illegible]	[illegible]	[illegible]
Course work	81	78	69	67
Teaching	10	10	10	10
Research	31	10	17	20

"[illegible] of an academic area
at the present time (1)" Users Question 10:

6.3.4 [illegible]

Earlier in this chapter, in considering the relation between use of computer services versus personal computer usage, we saw that there is an apparent correlation. If there is a perceived and natural preconception by some that engineering and science students are apt to use computer services more than others, such preconceptions are not supported when users are tabulated by academic area. Arts and humanities users combined with social sciences users represent a range of 64% to 81% of all users across samples, while physical and biological science users combined with engineering users represent a range of only 19% to 36%. It seems likely that the academic area distributions more nearly reflects the distribution of the student population as a whole than it reflects familiarity with or reliance upon computers as tools.

TABLE 29

Users Academic Area

	ARL%	NOR%	STA%	DAR%
Arts and Humanities	27	30	33	33
Social Sciences	17	24	28	25
Subtotal	44	54	61	58
Physical/Biological Sciences	13	09	08	11
Business/Management	12	12	09	03
Education	05	03	01	03
Engineering	12	13	10	11
Medical/Health Sciences	06	03	00	00
Law	02	02	01	00
Major not declared	03	01	04	11
Interdisciplinary	03	04	07	03

"TYE CATEGORY THAT BEST DESCRIBES MY ACADEMIC AREA IS:"
(Users Question 57)

6.3 USERS DEMOGRAPHIC CHARACTERISTICS

As were nonusers (see next chapter), users were classified by Age (Question 54), Sex (Question 55), and Education level (Question 56), with the following results.

6.3.1 Most users fall in the 20-34 age bracket

Naturally enough for samples dominated by college undergraduate students, most users (60% to 80% across samples) reported their ages as being between 20 and 34 years of age. Tabulations are given in Table 30

TABLE 30

Users Age

	ARL%	NOR%	STA%	DAR%
00-14	00	00	00	00
15-19	20	20	12	30
20-24	46	40	42	43
25-34	24	31	39	17
20-34 Subtotal	70	71	81	60
35-44	07	06	03	10
45-54	02	01	01	00
55-64	01	01	00	00
65+	00	00	03	00

"MY AGE GROUP IS:" (Users Question 54)

6.3.2 Users are 60% male, 40% female

The sex breakout of users is about 60% male and 40% female, except at Stanford where the male/female ratio is 70%/30% (see Table 31 following) .

TABLE 31

Users Sex

	ARL%	NOR%	STA%	DAR%
Female	39	39	30	37
Male	61	61	70	63

(Users Question 55)

6.3.3 Most users have some college education

Belaboring the obvious, in samples dominated by undergraduate students, most users should be expected to have graduated from high school but not yet have acquired baccalaureate degrees, which in fact is the case among our users, although overall by less than one might have expected. While no more than 5% across samples have no college education, 30% to 60% have some but 36% to 66% have some college or university degree. The implication may be that many users are transfers from community college, and/or college graduates working on a second degree at the undergraduate level. In any case, results are given in Table 32 .

TABLE 32

Users Education Level

	ARL%	NOR%	STA%	DAR%
Grade school or elementary school	01	00	00	00
High School or Secondary School	03	01	01	05
Some college or University	54	49	33	59
College or University Graduate	42	50	66	36

"MARK YOUR CURRENT OR HIGHEST EDUCATIONAL LEVEL:".
(Users Question 56)

6.4 SUMMARY

Computer catalog use is strongly correlated with frequent visits to the library. Across the four samples, 76% to 86% of all users reported that they visit the library either daily or weekly. In contrast, only 2% or 3% were first-time library visitors and only 8% to 13% estimated that they used the library no more than once a month. ARL and Northwestern users consult the computer catalog on most visits to the library, while Stanford users do so only about 25% of the time and Dartmouth users do so only 5% of the time.

About 20% to 60% of all computer catalog users also consult manual catalogs in every or almost every visit to the library. Excepting Dartmouth, about 25% to 35% of computer catalog users make daily or at least weekly use of computers other than the computer catalog. This compares with about 25% to 60% of the users who consult the computer catalog at least nearly every time they come to the library.

Some 37% to 67% of users are undergraduate students. The graduate student range is more significant--3% (Dartmouth) to 43% (Stanford). Other categories--faculty, staff, and "other"--are conspicuous by their absence. Reinforcing other findings, the academic focus of most users is on course work, in a range of 45% to 61%, versus a combined range of 8% to 47% for teaching and/or research. Arts and humanities users combined with social sciences users represent a range of 44% to 61% of all users across samples, while physical and biological science users combined with engineering users represent a range of only 18% to 25%.

Most users (60% to 80% across samples) are between ages 20 and 34. The sex breakout of users is about 60% male and 40% female, except at Stanford where the male/female ratio is 70%/30% While no more than 5% across samples have no college education, 30% to 60% have some but 36% to 66% have some college or university degree.

Chapter 7

NONUSER CHARACTERISTICS

7.1 REASONS FOR NONUSE

7.1.1 Training is important to the nonuser

Nonusers mark two kinds of reasons for their nonuse of the computer catalog: (1) No need or no knowledge that the computer catalog exists, and (2) No time to learn or the need to take training sessions.

TABLE 33

Reasons Nonusers Give for Nonuse

	APLS	PORS	STAS	DAPS
I do not like to use computers	05	04	03	02
I did not know there was a computer catalog	10	04	14	19
I do not know where it is	07	02	08	16
I have not had time to learn to use it	17	17	20	15
I have not taken training sessions on how to use it	19	14	20	18
There has not been any staff at the terminals to assist me in using it	04	06	02	01
The terminals were all in use when I wanted to use it	01	02	01	00
I have not needed to use any library catalog recently	16	20	15	15
The card catalog is easier to use	07	09	07	05
The card catalog contains more of the information I need	02	01	01	01
I am a visitor or infrequent user of this library	10	17	07	00

"I HAVE NOT USED THE COMPUTER CATALOG UP TO NOW BECAUSE:" (Nonusers Question 1)

7.1.2 And they believe the computer catalog is easy to learn

With regard to perceptions of time and effort to learn the computer catalog, it is interesting to note that the majority of the nonusers in all the subsamples think that the time needed to learn how to use the computer catalog is not longer than one hour, and that learning how to use the computer catalog is "somewhat" or "very" easy (see tables 34 and 35).

TABLE 34

Nonusers Estimates of Computer Catalog Learning Time

HOW MUCH TIME TO LEARN?	APLS	PUBS	STAS	DAPS
A day or more	03	02	01	00
Between 1/2 of a day and a day	04	02	04	02
Between an hour and 1/2 of a day	10	06	09	02
Between 30 minutes and an hour	23	20	22	18
Between 15 minutes and 30 minutes	23	27	29	37
15 minutes or less	37	45	35	35

"HOW MUCH TIME DO YOU THINK IT TAKES TO LEARN TO USE THE COMPUTER CATALOG?" (Nonusers Question 2)

TABLE 35

Nonusers Estimates of Ease/Difficulty of Learning

HOW EASY OR DIFFICULT TO LEARN?	APLS	PUBS	STAS	DAPS
Very difficult	01	01	01	00
Somewhat difficult	10	10	10	14
Somewhat easy	69	67	66	60
Very easy	32	42	43	66

"HOW DIFFICULT OR EASY DO YOU THINK IT WOULD BE TO LEARN TO USE THE COMPUTER CATALOG?" (Nonusers Question 3)

7.2 PERCEPTIONS OF COMPUTER CATALOGS

Even though almost 50% of the nonusers feel that they can't decide whether the computer catalog is better than the other catalogs, almost 90% of them describe their attitude towards the computer catalog as favorable, and almost 70% of them think that they are likely to use the computer catalog in the future.

7.2.1 Nonusers are favorably disposed toward computer catalogs

TABLE 36

Nonusers General Opinion of Computer Catalogs

	ARLS	PORS	STAS	DAPS
Very favorable	39	66	69	63
Somewhat favorable	51	67	66	67
Somewhat unfavorable	09	05	04	07
Very unfavorable	01	02	01	03

"MY OVERALL OR GENERAL ATTITUDE TOWARD THE COMPUTER CATALOG IS:" (Nonusers Question 4)

7.2.2 And they expect to become users

TABLE 37

Nonusers Own Expectations of Future Use

	6816	6365	5755	1665
Very likely	29	24	27	16
Somewhat likely	42	44	39	44
Somewhat unlikely	20	19	15	19
Very unlikely	09	11	09	17

"HOW LIKELY ARE YOU TO
USE THE COMPUTER CATALOG IN THE FUTURE?" (Nonusers Question 5)

7.2.3 Even though at the present, most cannot decide

TABLE 38

Nonusers Comparison of Computer and Manual Catalogs

THE COMPUTER CATALOG IS:

	6816	6365	5755	1665
Better	30	34	23	15
About the same	16	17	13	12
Worse	03	04	04	03
Can't decide	48	43	58	70

"COMPARED TO THE CARD, BOOK, OR MICROFILM CATALOG
IN THIS LIBRARY, THE COMPUTER CATALOG IS:" (Nonusers Question 6)

7.3 Nonusers information seeking

Nonusers were asked three questions about their use of information resources: how often they come to the library, how often they use the card catalog and how often they use a computer system other than the library's computer system. The three questions were identical in the Users and Nonusers questionnaires.

7.3.1 Nonusers use libraries a great deal

Some 619-659 of the nonusers use the library "daily" or "weekly", and in this they do not differ from the users.

Table 30

Nonusers' Library Use

	GELS	KUFS	ITSO	SOFS
Daily	35	33	40	42
Weekly	30	33	26	27
Monthly	17	14	19	11
About four times a year	09	09	03	09
About once a year	02	02	01	00
Not before today	09	07	03	01

"I COME TO THIS LIBRARY:" (Nonusers Question 7)

7.3.2 Nonusers consult the card catalog less often than users

The nonusers consult any library catalog less often than users (see Table 31, Chapter 6). Considering the fact that users have already switched partly to the use of the computer catalog, it is even more important to note that users are still the relatively more frequent users of the other catalogs.

Table 6i

Browsers Use of the Card Catalog

	MALE	FEMALE	OTHER	UNSPECIFIED
Every visit	19	14	19	12
Almost every visit	17	16	23	13
Occasionally	33	38	41	40
Rarely	10	24	23	28
Never	14	23	17	66

"I USE THIS LIBRARY'S BOOK, CARD OR MICROFILM CATALOGS." (Browsers Question 6)

7.3.3 Browsers are not heavy computer users generally

The browser group uses other computers less often than the user group, yet the user group themselves are not heavy computer users either.

Table 6j

Browsers Other Computer Use

	MALE	FEMALE	OTHER	UNSPECIFIED
Daily	07	06	12	06
Weekly	10	11	05	13
Daily/Weekly Subtotal	17	17	00	00
Monthly	10	14	12	16
About four times a year	09	12	06	17
About once a year	11	10	15	11
Never	53	49	58	39

"I USE A COMPUTER OUTSIDE OTTAWA MORE THAN LIBRARY'S COMPUTER CATALOGS." (Browsers Question 6)

7.0 [redacted] ACADEMIC PROFILE

[redacted] were asked three questions about their academic background: their application status, the focus of their academic work (e.g. teaching or research) and their broad academic area (e.g. social sciences, engineering). These three questions were identical on the User and Non-User Questionnaires.

7.0.1 [redacted] LIKE USERS, ARE MAINLY UNDERGRADUATES

The non-users, like the users, are mainly undergraduates, yet, except for Dartmouth, the user sample consist of more graduate students.

Table 40

[redacted] Academic Status

	[redacted]	[redacted]	[redacted]	[redacted]
Freshman/Sophomore	38	32	34	37
Junior/Senior	40	39	39	36
Undergraduate subtotal	78	70	72	73
Graduate--Master's (MA/MS)	11	11	13	10
Graduate--Doctoral (PhD)	04	07	13	06
Graduate--professional school	07	08	03	04
Graduate subtotal	22	26	26	20
Faculty	01	03	02	05
Staff	01	01	00	02
Other	07	10	01	11

*No response omitted
With this College or University (Non-Users Question 11)

7.0.2 [redacted] MAILS DURING SPRING RECESS

Compared to the users, more of the non-users focus on course work, as would be expected from the academic status distribution.

[illegible]

[illegible]

[illegible]

	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible] [illegible] [illegible] [

7.3 [redacted]

[redacted] were asked three questions about their demographic characteristics: age, sex and education level. These questions were identical on the User and Provider questionnaires.

7.3.1 [redacted]

Table 45

[redacted]

[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]

"[redacted]" [redacted] question (n)

4.4.2 [illegible]

Table of

Relevance Gap

	[illegible]	[illegible]	[illegible]	[illegible]
Female	[illegible]	[illegible]	[illegible]	[illegible]
Male	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

4.4.3 [illegible]

Table of

[illegible]

	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

4.5 [illegible]

[illegible]

The nonusers do not appear to have negative attitudes toward the computer catalog. They believe that they will be using the computer catalog in the future and they do not expect to have difficulties in learning how to use it.

The most frequently mentioned reasons for the present non-use of the computer catalog were the reasons of no need, no time to learn how to use it and not having taken a training session. Yet, the comparison between users and nonusers show that nonusers are in general, the more infrequent users of any library catalog, and points at the "no need" reason as possibly the more serious one.

Chapter 6

LIBRARY STAFF INTERVIEWS

This chapter summarises interviews with library staff conducted at the RLG libraries. The purpose of these interviews was to elicit qualitative data on staff perceptions to complement the quantitative data obtained from patrons. Interviews at Dartmouth and Northwestern were done in groups of four to eight people and interviews at Stanford were done on an individual basis to accommodate schedules and service responsibilities.

The interviews were conducted on a free-form basis using the question schedule in Appendix H. Not all questions elicited opinions and observations because of varying opportunities to observe patron use and because each library has a different length of experience with direct patron use. In general, at all libraries, staff expressed the full range of attitudes toward the computer catalog, from critical pessimism to enthusiastic optimism.

The following summary makes general points that emerged from most interviews and illustrates these with selected direct quotations. The summary is organized around the chapter topics presented in this report. Additional comments on the impact on the library organization are included because these came through so strongly.

6.1 VIEWS ON USES AND ASSESSMENTS

6.1.1 Assessments

User enthusiasm is acknowledged, but staff also notes some user apprehension about computer catalogs.

1. "When the computers went down one day, they wouldn't use the card catalog because they've gotten so used to the computer." The type of users who are enthusiastic and learning on their own are probably the same users who would have gotten a lot out of the library, anyway. I don't know that the computer is attracting anybody new."

2. "I think maybe it is (attracting new users). You watch sometimes out there, and the kids are showing off to their friends, and say, 'See, it's really easy.' I think there are people coming in here who otherwise would not."

3. "But there's also a general fear of computers. When we tell them they can use the computer to find serials, they're very reluctant, scared to death of using the computer.

4. "People from outside who come in say, 'Oh, well, I'm new to this library and I've never used the system.' And they want you to do it for them."

5. "They've never seen a terminal. And they're too nervous to use the instructions that are there. Often, they won't even use it. At the Information Desk, they'll come ask me to look it up. When I encourage them to use it, many times it's almost as if they can't even type, they're so nervous."

9.1.2 Search characteristics

Perhaps users minimize searching by call numbers because of the difficulties they encounter when they try to use them:

1. "A lot of people don't copy the call number correctly." "They say, 'I typed in the call number EXACTLY, and I didn't get it.' And we say, 'Did you type in the period?' and of course they didn't."

2. "The majority of people who come to the desk with this problem honestly believe they have done something correctly. It didn't say 'call number error' or 'there's nothing charged out under this call number, check to make sure call number is correct.' It just tells them that the book isn't checked out, which makes them think they've entered it correctly."

3. "They're also surprised that we can't put a call number into the computer and find out the author and title. We send them an overdue notice with a call number and they bring in a book, and then they discover it's another book which is overdue."

4. "But it's the new book which already has a call number that causes problems in circulation. We have learned to try to find these books. But we have many more requests than before for new items which no one knows ARE new items until we check."

9.1.3 Circumstances of use

User reports of self-reliance in learning and using the computer catalog are not supported by staff observations:

1. "One of the things we should tell them initially is that you can't break the terminal. 'Don't be afraid, it doesn't break.'"

2. "They want a human being to lead them through it the first time. You ask them, 'Did you try typing the title command', and they don't even know what that refers to. You can see on the screen that they haven't tried."

3. "It's a matter of people not being willing to take the time to read and follow instructions."

4. "Our terminals give no instructions on how to start. For two users approaching the terminal, they see whatever the last user left. People usually move from one terminal to another, rather than being able to push a button and get started. That's a problem."

5. "As far as giving assistance is concerned, that got much better after we redesigned the screens and added more prompts. Before that, I was dragged over constantly and asked how it work. That's changed now."

6. "Libraries would be a lot further ahead if they oriented every freshman class to the computer catalog. We don't have the resources, and I'm not sure they want it, but we would be a lot further ahead if we had."

7. "Some people almost know too much. They've used several different library systems as well as other computers. They say, 'I've been to Dartmouth University Library, and that's how it works there.' Or they use Boolean logic, and they expect to put in something and get a nice subject search, without having the correct subject."

6.3 TYPES OF PROBLEMS

6.3.1 Problems with retrieval features

Staff perceive that users often find it difficult to learn and follow search features and procedures:

1. "Many people don't know how to make the computer work for them. They don't know that they can type in only what they know, and let the computer take it from there. If they put something in and get nothing, users often will walk away, even if the error is really obvious."

2. "I think a lot of our users in science and engineering libraries are quite accustomed to using computers for other types of computational programs but they may not be acquainted with information retrieval programs."

3. "If the patron sees the screen in the circulation mode, s/he often doesn't realize you can go from that mode to the search mode on the same terminal. It isn't like the screen blanks out and says, 'Do or do. Do this,' to force you to do something. You see some information, you see all the standard command lines. And you also see, somewhat in there, a

line of instructions. It's most important to have on your screen the necessary things when they first see it. And to keep it as simple as possible."

4. Another problem is the use of middle initials. Unless the programmer put it in, you'll never find the name...and our users seem to think that abbreviations--not only standard but non-standard abbreviations--will be acceptable to the computer. There is often a problem with 'U.S.', which is put in as 'US.' We ignore some punctuation, but here you must have it...Abbreviation of locations is a big problem."

5. "If we've discharged a book ten minutes before the user comes to the computer, the computer will say 'This book was discharged May 15, it should be in place on the shelf.' And of course it won't be. This happens a lot, especially around midterms and finals, when it takes longer to get the book back on the shelf."

6. "So many times, the system comes back with 'Hold On', and I'm not sure what I'm supposed to do. When the system goes, and people don't have access for several hours, we don't have a way of letting people know the system will be down, we don't notify all stations where there might be a terminal. I have no way of knowing if the computer center knows it's down, if it's down all over the library, or just the terminals, or what. It's a problem already, with remote terminals in faculty offices."

6.3 Views on improvements

6.3.1 Software improvements

Users and staff are in general accord concerning software improvements:

1. "If you could tell the computer, 'I want to search all volumes for the occurrence of this term,' and it would respond and say 'there are 50 author entries, 20 title entries, and 300 subject entries'-- that would be a great help. It would eliminate three commands that are very difficult for users."

2. "At present, we have only three fields: author, title, and subject. More of a Boolean approach could be helpful. I can see where there might be a user need for language or date limitations, or many other things."

3. "People have asked for by-word access to titles."

4. "They're also surprised that we can't put a call number into the computer and find out the author and title."

4.3.2 Service improvements

Staff share user interest in reading groups, and see other possibilities as well.

1. "The terminal speeds service up tremendously. You can answer a holdings question in about three seconds, as opposed to walking out to the card catalog and coming back."

2. "Cable TV is another possibility. Our cable will be interactive with the computer. This could provide a teaching opportunity, and perhaps even access to the database through the TV set, depending on what's possible."

3. "It might be helpful to have a printout of the screen, rather than their having to write it all down."

4. "It would be good if we could have the system process 80% of the requests at once and push off the more esoteric ones."

4.3.3 Database improvements

Staff desire a larger, more accessible, better integrated database.

1. "Our biggest problem is that they don't realize coverage is only after the date the database was started."

2. "I think the redesign will have to include a way to reclaim serials."

3. "We should combine circulation and catalog systems."

4. "One option I think we should consider when we redesign the system is an either/or authority/title option, as it will push it up in either case."

5. "I think keyword indexing might be a help, using titles as subjects. Some people put in a subject as a title all the time. But they only get it if the title begins with the subject."

6. "Now that we have subject access, if someone asks if we have something on Jerry Brown, you just enter 'Edmund G. Brown Jr.' in the terminal. At one point, that should have been a five-minute reference transaction."

7. "Having the union catalog accessible at every terminal is very helpful. Many of our undergraduate users find that the only copy of something they want is in the Law Library. It is very helpful to them to know that. We use that knowledge ourselves in many ways. When we want to see where else we can get a particular periodical, or we decide not to replace it because someone else has it."

4.4 [redacted]

4.4.1 [redacted]

[redacted]

1. "Having used the computer, people are more sophisticated users of the catalog. They pay more attention to the intricacies in finding things. What is a subject heading? What do you mean by all this vocabulary? It may be pertinent to their end information needs. But they're using it more like librarians have always envisioned they should."

2. "I think lots of people type in the title of an article. They don't know that the file lists only the title of the journal. The freshmen are doing that now."

3. "We've had some problems with people not realizing there are invertid sentences in subject headings. We try to mention that they should check Library of Congress Subject Headings for something they can't find, but they don't."

4. "Another problem is having users understand the scope and content of the file when they approach the terminal. Some people want more detailed bibliographic information than the screen displays. That's equally a problem for the first-time user and for the repeater."

4.4.2 [redacted]

[redacted]

1. "When we first started putting microfiche out, half of the faculty accepted it, and we're still waiting for the rest of them. The computer catalog may be the same way."

2. "A large portion of the faculty--some of the older faculty especially--are reluctant users. I've had older faculty members explain to me that they have greatly embarrassed. They've done research all their lives. Now, all of a sudden, they've asked to learn new habits, and they're self-conscious about it. If there were a way to provide a manual environment, that might help. It would be nice to have a terminal someplace conspicuous. There is a problem, sitting there bumbling around while your students is watching."

3. "Some graduate students think they're very good library users. Yet they've never had to use the computer system, and we're thinking seriously of some kind of changes the way they have to do research. Once you show them what it can do, they're happy, but it is very difficult to get them to sit down at those terminals."

4. "There's a lot on the screen, and it's not presented with a lot of graphic sophistication. It's not cluttered, there's no fancy decor. It's hard to produce something that immediately catches their eye. Most of it is they're narrow, because the narrows are right there in public view, and it's all alphabetic. They have like they're handling expensive equipment amidst all these people."

4.4 Items of Organizational Impact

4.4.1 Impacts on Libraries

Staff had mixed feelings about changing roles, tasks, and images:

1. "In more advanced public service areas, staff are being called upon to answer questions which may might never have been asked before. Traditionally, we in reference have been, a kind of clearinghouse for general information. The question is might there, and whatever happens to be entering there is asked why they don't find what they want."

2. "It makes our interaction in using the service much more efficient, because we can use it with them. Before, because of the physical layout, we did a lot of repeating without accomplishing them."

3. "It has generally increased our work load at the information desk. Before, people would just go ahead and try to use the card catalog. Now they come with more prone to ask for help. In fact, we practice anything the information desk for some because of this, and it's been necessary."

4. "If you need to make a phone call, there go computer, it's easier to do that with the card. Because you haven't already spent two minutes at the card catalog with them. So we can suggest the terms of service be provided within the many time frame."

5. "The persons who come to the reference desk seem to the whole much better informed. They are more they should give you the volume number and the pages. They have me have a copy in the more extensive. Whereas if they were to the card catalog or the second card, they might not have looked further."

6. "The library has become more accessible. Because of the computer catalog, people though, in some ways, it is more cumbersome because of technological barriers. People are more willing to inquire it out, play around with it. The computer makes library professional activities much more visible to the user."

7. "I like that people think technology is used more widely in the library than they had realized. They ask, 'Are did you learn all this stuff?' So you have to go to library school to learn this?"

8. "I dread the Friday afternoon five years from now when I go to the active recycle and it's down, and they all have papers due on Monday. What do you do?"

8.1.2 [illegible]

[illegible] ... more extensive discussions on design, implementation and redesign of commercial databases.

1. "There are problems in every library between technical services and public services, whether the library is computerized or not."

2. "When the systems first came up, we had problems continuously. There are messages such as 'The library does not exist this node.' That's a subscription check in the file of customers. That we had the book, they put it in, and put that out this afternoon message. And the people in the programming side don't see this as much of a problem. Because they don't deal with it, day to day."

3. "Even having more support with people in computing on the systems office has helped us to understand why the system is designed as it is, and it's helped them to understand why we circulate and create patrons [illegible]."

4. "Because we don't do the programming, we think, well, why can't we just draft a button and it will call us if the book is on the shelf? That may be an incredibly complex problem, but we don't know that. We have to rely on a consultant. Sometimes, you think, this doesn't work, but you never bring it up because you think it would be difficult to write. That a programmer will say, 'That's no problem, we can do that very simply.'"

5. "If you have enquiries routing to a large number of users, there are so many points where there must be consensus. What should the message say?"

6. "Let's say we had the terminal screen open on a password box, and we prompt it off and circulated it. We could all sit down with a cup and [illegible] figures on the screen, [illegible] we think are circled on which be more clear of another difficulty. And like they improve the situation. It would be a good idea to circulate it to the librarians for their comments. We could take it out to the terminal and fiddle with it however we wanted to."

[illegible]

Chapter 9

[illegible] FOR LIBRARY MANAGEMENT, REFERENCE STAFF, AND SYSTEM DESIGNERS

9.1 INTRODUCTION

[illegible] study is the first of its kind. The findings and implications about [illegible] the computer environment. What should be done? Should public access catalogs (OPAC) grow out of the present, automated, or [illegible] and where will the experience in the near future. Questions will be made on the basis of the best information and judgments available.

Various users and categories in the data and findings [illegible] Many were [illegible] will depend how on the use and interaction among individuals to electronic information, [illegible], or circumstances. In this chapter, we [illegible] opinions which seem to us important for [illegible] [illegible] [illegible] [illegible] public access catalogs (OPAC) [illegible].

9.2 [illegible] FOR LIBRARY MANAGEMENT

1. [illegible] of OPAC [illegible]

   A range of [illegible] of users [illegible] [illegible] [illegible] [illegible]

[illegible]

[illegible]

[illegible]

1. [illegible]

[illegible]

[illegible]

[illegible]

2. [illegible]

[illegible]

[illegible]

[

[illegible]

[illegible]

[illegible]

want." Evidently, which staff members are asked by users to provide what assistance depends a great deal on where terminals--and thus the catalog--are situated.

Another staff member noted that having a terminal at the information desk greatly expedites teaching users while assisting them. Formerly, reference and information desk personnel often answered specific questions and sent the user off to dig in the manual catalog. With a terminal at the inquiry desk, a staff member can formulate the reference question, demonstrate how to search, and help the user evaluate results, all often in the same or less time than formerly was required to understand and respond to a user's initial question.

Such considerations underscore the reality that the computer catalog is something more and other than new wine in a new bottle. It is essential but by no means sufficient to have terminals at or near the manual catalog, so that users can use both. Where else to have them, and why are concerns of vital importance to library staffs.

4. Library staffs should evaluate and recommend human-factor priorities for terminals and terminal areas.

Physical features lend themselves less well to user query, compared with non-physical aspects. Human factor observation and design methods are well-established. The human factors literature should be held in view and exploited intelligently when OPAC are designed and implemented. A few insights revealed in our survey bear mention. Some 91% to 100% of users across samples reported that terminal height was a problem (Table 18). Some 29% to 50% reported that writing space was a problem (Table 19).

No general standards for terminal height have as yet been adopted, so that height variation may pose some problems. Further, libraries may be using writing tables on hand whose height and design are not coordinated with terminal use. Few OPAC as yet provide printout capability; printouts may alleviate writing problems associated with copying long lists of references from the terminal screen, but the problems--whatever they are--will remain for copying brief citations, etc. The important implication here is simply that users have identified these two factors as significant problems which should be addressed.

5. Extensive and intensive efforts must be made to make users aware of and informed about OPAC scope and content.

Knowing what is in the data base was the library service problem most singled out by ARL users (37%) and was noted by 25% to 33% of the responses in the other samples (Table 17). Staff interview comments hint that users expect that 'everything' will be in the OPAC, apparently meaning at least everything that is in the manual catalog.

Such an ideal will not be realized for a long time in most libraries. Meanwhile, adequate means must be found to keep users well informed about

constantly aware of what types of items are included in and excluded from the database, and for what periods of time. Staff reports that many users accept unquestioningly 'what the computer says,' even for items which users know, or should know, that the library has. The following exchange from staff interviews is instructive on this point:

> "In another four years, we'll have to spend as much time reeducating the students who have literally grown up on the computer to the fact that there ARE things in the card catalog that are not in the computer. People get so used to using the computer that it doesn't even occur to them that there might be something else."
>
> "I think there are people like that now."
>
> "I think it's going to get worse."
>
> "If a user puts something in and gets nothing, it's common for him to walk away, even if the error is really obvious. We try to stress in training classes that users be logical, that we DO have books by James Joyce, for instance. And yet people will walk away from a search like that."

4. Providing cost-effective subject/search access is an immediate and major challenge.

When users were asked to identify OPAC retrieval feature problems (Table 14), making a subject-heading search and finding the correct subject term were ranked in first to fourth place in three of our four samples (10% to 49%). At Northwestern, where browsing by LC subject heading is provided, staff reported users ignored staff attempts to encourage LCSH use. There is also anecdotal evidence that users use or try to use author names and topic words or phrases as subject headings.

True online subject searching will not become commonplace in libraries overnight. As of this date, the central problems and issues have not been well established, and in any case the development and maintenance costs are sobering.

On the other hand, users may feel that 'a catalog is a catalog', and may expect OPAC to provide at least as much scope and searchability as manual catalogs. Some sophisticated users may expect OPAC to provide boolean-type search capabilities.

Subject-access for OPAC is and will be a serious challenge for libraries for some time. Public service library staffs may bear the brunt of the problem, as reluctant users demand a satisfactory answer to the question: 'But why can't I do that?' Forewarned is forearmed. Beyond that, library staffs can minimize the difficulty by insuring that user needs and preferences be as well understood as possible, and that these be addressed as well as possible in OPAC. 'What to do until the future arrives' is more than a trivial question.

9.4 IMPLICATIONS FOR SYSTEM DESIGNERS

1. Software and software designers and consultants should take the initiative in making sure that ORAC requirements and principles are thoroughly understood and agreed upon.

Our evidence on this point comes from the staff interviews and from our own experience. The feelings of many public service and technical service staffs are captured in the following:

> "Users ask us why the computer can't be more forgiving. Or there are messages such as 'The library does not hold this item.' That's a continual thorn in the side of Reference. They've had the book, they put it in, and then they have this mysterious message. And yet the people on the programming side don't see this as much of a problem, because they don't deal with it day to day...(And) because we don't do the programming, we think, well, why can't we just push a button and it will tell us if the book is on the shelf. That may be an incredibly complex problem, but we don't know that. We have no real way to make a judgment. Sometimes, you think 'this doesn't work,' but you never bring it up because you think it would be so difficult to solve. Then the programmer will say, 'That's no problem, we can do that very simply.'

Or, again:

> "Let's say we had the text as it appears now, and we printed it off and circulated it. We could all sit down with a red pen and recommend changes in the wording, instructions we think are unclear or could be more clear if worded differently. Anytime they do make a change in the interface, it would be a good idea to circulate it to the librarians for their comments. We could take it out to the terminal and fiddle with it, however we wanted to... I'm not saying we should write the interface, but we ought to have a crack at it, somewhere along the way."

Library staffs are for systems designers a rich surrogate resource representing the persons before rushing to judgments about design, systems people will do well to help library staffs identify and think through the problems, priorities, and preferences of users and those who must immediately assist them in learning and using ORAC. The extra time and effort invested in formulating the problem will be more than compensated for in lessened requirements for redesign "fixes" and in initial user acceptance and satisfaction.

2. Systems should be as free-standing as possible.

Survey evidence cited in preceding sections (Table 14) indicates that many users learn to use ORAC by following classroom instructions and printed instructions as or near the terminal. Other evidence (Table 17) indicates that the same sources are most relied upon in making actual searches.

Staff interviews, on the other hand, report that many would-be users are thoroughly confused and baffled by DROI, and would like nothing better than to have staff make their searches, so that they the users could avoid the whole system.

A plausible conjecture is that users believe the system should be useable without staff assistance, but often find that they cannot learn to use it on their own; and so seek assistance, but are reluctant to consume what they perceive to be their own resources.

Whatever our conjecture, there can be no disputing the importance of maximum system friendliness. If in fact users do not seek or do not receive staff assistance, training and guidance must be provided by the system. On the other hand, if users are so inadequate and intimidated as some staff observers believe, every feasible effort must be made to make the system easy, powerful, and preferable to use.

3. Some specific features that designers should emphasize.

Our DROI users identified retrieval features problems which imply some priorities for DROI systems (Table 10).

From Table 10, increasing the result of a search, finding a correct subject term, and making a subject heading search were the three most-cited retrieval problems in the DROI and bibliography samples, covering a range of 59% to 14% of all responses given.

The subject-access problem was discussed in the preceding section, and is at least as great a challenge for designers as for library users. The problem is multi-faceted and involves tradeoffs among cost, comprehensiveness, friendliness, response time, and appropriate subject-term procedures. Though it is not apparent, immediate, or generally preferable resolution of the matter, but it nevertheless remains both urgent and important. When users were asked to identify desired improvements in DROI software, 31% to 19% of all responses concerned subject-search-related features (Table 11, items 1-3-5). Viewing search-word-related terms and searching book tables of contents, summaries, and indexes were especially popular preferences.

System designers must also build into systems clear, memorable, and frequent cautionary and the scope, content, and period coverage of the database (Table 17). Problem prompts or other online-search features may be needed to augment explanations printed on terminals and handed-out in orientation sessions.

The fact that users singled out "increasing a search result" as a serious problem deserves some consideration. The problem was also noted in staff interviews:

> "Even after they find something, they don't know how to go on, after they get the bibliographic display. They don't know how to get back to the subject search."

"The other frustration thing is not to know if you've made a mistake and this is why the machine is responding the way it is, or whether it's somethingwith the system."

Dr Kubin:

"Many people don't know how to make the computer work for them, to take in only what they know, and let the computer take it from there. They try to do everything at once, and often get nothing that way."

It seems the system needs to provide both general orientation and training opportunities before a search begins, and other prompts and assistance during the actual search.

The general orientation might consist of a two-or three minute computer tutorial whose availability is prominently announced by signs on the terminals. A tutorial that can be accessed by hitting a single key and which concludes with the opening screen for an actual search.

During the search, either a dynamically or user-specific HELP station might be provided, again accessible by hitting a single key, and with a reminder to that effect displayed on every screen. The messages are meant to be informative, not prescriptive, but the user has more sophisticated means under user and problem control. The Design challenge requires creative effort and user testing at every stage. When users choose to designate and might often do not do so in the interest of commercial ease of use. Dr. Kubin suggests of online Explorer puts it perhaps:

"Look around carefully, and you'll soon find many instructions that do not interest and directions that do not direct."

Appendix A

PARTICIPATING LIBRARIES AND COMPUTER SYSTEMS

PILOT PARTICIPANTS	COMPUTER CATALOG USED
J. Barrington and Associates, Inc.	
Claremont College	UTLAS* (Claremont Pilot)
Evanston Public Library	Pilot
Nankato State University	UTLAS*
Ricevue College	Ricevue**
Rolvin Peale Library Kvanvick	UTLAS* (Research & Pilots)
Stephen F. Austin State University	NetworkPlus
West Valley College	Ricevue**
Library of Congress	NUMA SCIENCE
The Research Libraries Group (RLG)	
Dartmouth College	UTLAS*
Northwestern University	UTLAS* (LUIS)
Stanford University	RLIN II
University of California Sys. of Lib. Automation	
UC Berkeley	Ricevue (NOTIS)
UC Davis	Ricevue (NOTIS)
UC Irvine	Ricevue (NOTIS)
UC Los Angeles	Ricevue (NOTIS)
UC Riverside	Ricevue (NOTIS)
UC San Diego	Ricevue (NOTIS)
UC San Francisco	Ricevue (NOTIS)
UC Santa Barbara	Ricevue (NOTIS)
UC Santa Cruz	Ricevue (NOTIS)
Ohio Computer Library Center (OCLC)	
Case Western Reserve University	UTLAS*
Kansas Public Library	UTLAS* (LUIS)
Lima City Public Library	Pilot
Ohio State University	OCLC
Syracuse University	UTLAS* (DECCMS)
Ohio University	OCLC
State Library of Ohio	OCLC
University of Akron	OCLC
University of Tenn., Knoxville	OCLC
University of Tenn., Nashville	OCLC

* Utlas=Universal Terminal Online Service
**Ricevue computer stores the data bases and software.

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Appendix B

QUESTIONNAIRE VARIABLES: FINAL AGE FILES VERSIONS

*** USER QUESTIONNAIRE VARIABLES: Final Questionnaire ***

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PART 3: ABOUT YOURSELF

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Appendix C

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OLD USER GUEST: LIBRARY COMPARISON STUDY OLD LIB WITH ARL 09/11/92 PAGE 23

FILE FINAL (CREATION DATE = 09/03/92)

CROSSTABULATION OF
NET SAME ACROSS OTHER THINGS OF INTEREST BY LIBRARY RECORDED LIBRARY-SYSTEM
PAGE 1 OF 1

NET	LIBRARY	1	2	3	4	ROW TOTAL
YES	1	18	230	46	1738	2032
		0.9	11.3	2.3	85.5	46.0
		43.9	37.8	48.9	47.3	
		0.4	5.2	1.0	39.3	
NO	2	23	379	48	1937	2387
		1.0	15.9	2.0	81.1	54.0
		56.1	62.2	51.1	52.7	
		0.5	8.6	1.1	43.8	
COLUMN TOTAL		41	609	94	3675	4419
		0.9	13.8	2.1	83.2	100.0

CHI SQUARE = 13.48870 WITH 3 DEGREES OF FREEDOM SIGNIFICANCE = 0.0102
PEARSON'S R =-0.06110 SIGNIFICANCE = 0.0038

NUMBER OF MISSING OBSERVATIONS = 282

FILE FINAL (CREATION DATE = 08/03/82)

CROSSTABULATION OF R25 IN THIS SEARCH I FOUND BY LIBSYS2 RECODED LIBRARY-SYSTEM

R25	LIBSYS2	1. DARTMOUT	2. NORTHWES TERN	3. STANFORD	4. OTHER AR L LIBS	ROW TOTAL
1. MORE THAN	COUNT	9	67	15	568	659
	ROW PCT	0.8	10.2	2.3	86.7	14.8
	COL PCT	12.2	11.1	16.3	15.4	
	TOT PCT	0.1	1.5	0.3	12.8	
2. ALL OR MOST	COUNT	9	232	22	903	1162
	ROW PCT	0.6	20.0	1.9	77.7	26.3
	COL PCT	12.2	38.3	23.9	24.5	
	TOT PCT	0.1	5.2	0.5	20.4	
3. SOME	COUNT	16	241	42	1477	1776
	ROW PCT	0.9	13.6	2.4	83.2	40.2
	COL PCT	21.6	39.8	45.7	40.1	
	TOT PCT	0.4	5.5	0.9	33.4	
4. NOTHING	COUNT	15	65	13	736	829
	ROW PCT	1.8	7.8	1.6	88.8	18.7
	COL PCT	20.3	10.7	14.1	20.0	
	TOT PCT	0.3	1.5	0.3	16.6	
COLUMN TOTAL		41	605	92	3684	4422
		0.9	13.7	2.1	83.3	100.0

CHI SQUARE = 87.52903 WITH 9 DEGREES OF FREEDOM SIGNIFICANCE = 0.0000
PEARSON'S R = 0.03584 SIGNIFICANCE = 0.0086

NUMBER OF MISSING OBSERVATIONS = 279

FILE FINAL (CREATION DATE = 08/03/82)

* * * * * * * * * * * * C R O S S T A B U L A T I O N * * * * * * * * * * *
QUEST4 (TABULATING 1) I NEED THIS INFORMATION FOR:
BY LIBSYS2 RECODED LIBRARY-SYSTEM
* PAGE 1 OF 2

LIBSYS2

QUEST4	COUNT / ROW PCT / COL PCT	DARTMOUT H	NORTHWES TERN	STANFORD	OTHER AR L LIBS	ROW TOTAL
		1	2	3	4	
RQ4A RECREATIONAL USES		7	55	14	486	562
		1.2	9.8	2.5	86.5	12.6
		17.1	9.0	14.7	13.1	
RQ4B MAKE-FIX SOMETHING		0	4	0	78	82
		0.0	4.9	0.0	95.1	1.8
		0.0	0.7	0.0	2.1	
RQ4C WORK OR JOB		9	105	20	529	663
		1.4	15.8	3.0	79.8	14.8
		22.0	17.1	21.1	14.2	
RQ4D PERSONAL INTEREST		15	102	23	895	1035
		1.4	9.9	2.2	86.5	23.2
		36.6	16.6	24.2	24.1	
RQ4E HOBBY		0	14	5	251	270
		0.0	5.2	1.9	93.0	6.0
		0.0	2.3	5.3	6.7	
RQ4F CLASS-COURSE READING		8	204	23	1238	1473
		0.5	13.8	1.6	84.0	33.0
		19.5	33.3	24.2	33.3	
RQ4G COURSE PAPER-REPORT		18	274	39	1687	2018
		0.9	13.6	1.9	83.6	45.1
		43.9	44.7	41.1	45.3	
RQ4H THESIS-DISSERTATION		3	99	27	395	524
		0.6	18.9	5.2	75.4	11.7
		7.3	16.2	28.4	10.6	
RQ4I PUBLICATION		2	66	11	256	335
		0.6	19.7	3.3	76.4	7.5
		4.9	10.8	11.6	6.9	
RQ4J TEACHING A COURSE		0	25	8	173	206
		0.0	12.1	3.9	84.0	4.6
		0.0	4.1	8.4	4.6	
RQ4K KEEP UP ON TOPIC		8	57	14	518	597
		1.3	9.5	2.3	86.8	13.4
		19.5	9.3	14.7	13.9	
COLUMN TOTAL		41	613	95	3721	4470
		0.9	13.7	2.1	83.2	100.0

PERCENTS AND TOTALS BASED ON RESPONDENTS

4470 VALID CASES 231 MISSING CASES

FILE FINAL (CREATION DATE = 08/03/82)

• • • • • • • • • • • • C R O S S T A B U L A T I O N • • • • • • • • • • • •
QUEST2 (TABULATING 1) IN THIS SEARCH I WAS TRYING TO FIND:
BY LIBSYS2 RECODED LIBRARY-SYSTEM
• PAGE 1 OF 1

LIBSYS2

QUEST2	COUNT / ROW PCT / COL PCT	DARTMOUT IN TERN	NORTHWES	STANFORD	OTHER AR L LIBS	ROW TOTAL
		1	2	3	4	
RQ2A SPECIFIC BOOK ETC		11	381	63	1890	2345
		0.5	16.2	2.7	80.6	52.3
		28.9	62.2	67.0	50.6	
RQ2B BOOKS ON TOPIC		30	261	47	1949	2287
		1.3	11.4	2.1	85.2	51.0
		78.9	42.6	50.0	52.1	
RQ2C BOOKS BY SPEC AUTHOR		10	162	27	899	1098
		0.9	14.8	2.5	81.9	24.5
		26.3	26.4	28.7	24.1	
RQ2D PUB-DATE-SPELLING		1	28	7	192	228
		0.4	12.3	3.1	84.2	5.1
		2.6	4.6	7.4	5.1	
RQ2E IF BOOK IS AVAILABLE		1	144	12	629	786
		0.1	18.3	1.5	80.0	17.5
		2.6	23.5	12.8	16.8	
RQ2F OTHER LIBRARY W BOOK		0	13	19	281	313
		0.0	4.2	6.1	89.8	7.0
		0.0	2.1	20.2	7.5	
COLUMN TOTAL		38	613	94	3738	4483
		0.8	13.7	2.1	83.4	100.0

PERCENTS AND TOTALS BASED ON RESPONDENTS

4483 VALID CASES 218 MISSING CASES

FILE FINAL (CREATION DATE = 08/03/82)

* * * * * * * * * * * * C R O S S T A B U L A T I O N * * * * * * * * * * * *
QUEST1 (TABULATING 1) I CAME TO THE SEARCH WITH:
BY LIBSYS2 RECODED LIBRARY-SYSTEM
* PAGE 1 OF 1

LIBSYS2.

QUEST1	COUNT / ROW PCT / COL PCT	DARTMOUT H	NORTHWES TERN	STANFORD	OTHER AR L LIBS	ROW TOTAL
		1	2	3	4	
RQ1A COMPLETE AUTHOR		12	315	54	1637	2018
		0.6	15.6	2.7	81.1	44.6
		30.8	51.4	56.8	43.3	
RQ1B PART AUTHOR'S NAME		3	94	29	514	640
		0.5	14.7	4.5	80.3	14.1
		7.7	15.3	30.5	13.6	
RQ1C COMPLETE TITLE		8	307	38	1478	1831
		0.4	16.8	2.1	80.7	40.5
		20.5	50.1	40.0	39.1	
RQ1D PART TITLE		5	101	22	404	532
		0.9	19.0	4.1	75.9	11.8
		12.8	16.5	23.2	10.7	
RQ1E TOPIC WORD OR WORDS		13	111	25	1106	1255
		1.0	8.8	2.0	88.1	27.7
		33.3	18.1	26.3	29.3	
RQ1F SUBJECT HEADING		23	202	31	1622	1878
		1.2	10.8	1.7	86.4	41.5
		59.0	33.0	32.6	42.9	
RQ1G COMPLETE CALL NUMBER		0	62	1	210	273
		0.0	22.7	0.4	76.9	6.0
		0.0	10.1	1.1	5.6	
RQ1H PART CALL NUMBER		0	3	1	48	52
		0.0	5.8	1.9	92.3	1.1
		0.0	0.5	1.1	1.3	
COLUMN TOTAL		39	613	95	3777	4524
		0.9	13.5	2.1	83.5	100.0

PERCENTS AND TOTALS BASED ON RESPONDENTS

4524 VALID CASES 177 MISSING CASES

FILE FINAL (CREATION DATE = 08/03/82)

• • • • • • • • • • • • C R O S S T A B U L A T I O N • • • • • • • • • • • •
QUEST3 (TABULATING 1) I SEARCHED FOR WHAT I WANTED BY:
BY LIBSYS2 RECODED LIBRARY-SYSTEM
• PAGE 1 OF 1

LIBSYS2

QUEST3	COUNT / ROW PCT / COL PCT	DARTMOUTH	NORTHWESTERN	STANFORD	OTHER ARL LIBS	ROW TOTAL
		1	2	3	4	
RQ3A COMPLETE AUTHOR		11	260	49	1440	1760
		0.6	14.8	2.8	81.8	39.4
		27.5	42.3	52.1	38.8	
RQ3B PART AUTHOR'S NAME		7	122	35	624	788
		0.9	15.5	4.4	79.2	17.7
		17.5	19.9	37.2	16.8	
RQ3C COMPLETE TITLE		6	258	29	1301	1594
		0.4	16.2	1.8	81.6	35.7
		15.0	42.0	30.9	35.0	
RQ3D PART TITLE		9	111	27	547	694
		1.3	16.0	3.9	78.8	15.6
		22.5	18.1	28.7	14.7	
RQ3E TOPIC WORD OR WORDS		17	110	27	1092	1246
		1.4	8.8	2.2	87.6	27.9
		42.5	17.9	28.7	29.4	
RQ3F SUBJECT HEADINGS		21	200	32	1545	1798
		1.2	11.1	1.8	85.9	40.3
		52.5	32.6	34.0	41.6	
RQ3G COMPLETE CALL NUMBER		0	89	2	171	262
		0.0	34.0	0.8	65.3	5.9
		0.0	14.5	2.1	4.6	
RQ3H PART CALL NUMBER		0	1	2	29	32
		0.0	3.1	6.3	90.6	0.7
		0.0	0.2	2.1	0.8	
COLUMN TOTAL		40	614	94	3714	4462
		0.9	13.8	2.1	83.2	100.0

PERCENTS AND TOTALS BASED ON RESPONDENTS

4462 VALID CASES 239 MISSING CASES

FILE FINAL (CREATION DATE = 08/03/82)

CROSSTABULATION OF RQ52 HEARD ABOUT COMPUTER CAT FROM BY LIBSYS2 RECODED LIBRARY-SYSTEM

RQ52	LIBSYS2 COUNT / ROW PCT / COL PCT / TOT PCT	DARTMOUTH 1.	NORTHWESTERN 2.	STANFORD 3.	OTHER ARL LIBS 4.	ROW TOTAL
1. NOTICED TERM IN		23	441	75	2217	2756
		0.8	16.0	2.7	80.4	66.0
		57.5	73.1	81.5	64.4	
		0.6	10.6	1.8	53.1	
2. LIBRARY TOUR		1	96	4	423	524
		0.2	18.3	0.8	80.7	12.6
		2.5	15.9	4.3	12.3	
		0.0	2.3	0.1	10.1	
3. ARTICLE-ANNOUNCE		2	12	0	100	114
		1.8	10.5	0.0	87.7	2.7
		5.0	2.0	0.0	2.9	
		0.0	0.3	0.0	2.4	
4. INSTRUCTOR		1	8	0	183	192
		0.5	4.2	0.0	95.3	4.6
		2.5	1.3	0.0	5.3	
		0.0	0.2	0.0	4.4	
5. FRIEND - FAMILY		5	29	6	284	324
		1.5	9.0	1.9	87.7	7.8
		12.5	4.8	6.5	8.3	
		0.1	0.7	0.1	6.8	
6. LIBRARY STAFF		8	17	7	233	265
		3.0	6.4	2.6	87.9	6.3
		20.0	2.8	7.6	6.8	
		0.2	0.4	0.2	5.6	
COLUMN TOTAL		40	603	92	3440	4175
		1.0	14.4	2.2	82.4	100.0

6 OUT OF 24 (25.0%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 1.092
CHI SQUARE = 84.87532 WITH 15 DEGREES OF FREEDOM SIGNIFICANCE = 0.0000
PEARSON'S R = 0.07582 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 526

FILE FINAL (CREATION DATE = 08/03/82)

* * * * * * * * * * * * C R O S S T A B U L A T I O N * * * * * * * * * * *
QUEST8 (TABULATING 1) I GOT HELP FROM:
BY LIBSYS2 RECODED LIBRARY-SYSTEM
* PAGE 1 OF 1

LIBSYS2.

QUEST8	COUNT / ROW PCT / COL PCT	DARTMOUTH	NORTHWESTERN	STANFORD	OTHER ARL LIBS	ROW TOTAL
		1	2	3	4	
RQ8A PRINTED MATTER-SIGNS		11	78	72	1658	1819
		0.6	4.3	4.0	91.1	41.2
		26.8	12.8	76.6	45.2	
RQ8B TERMINAL SCREEN INST		21	321	10	1104	1456
		1.4	22.0	0.7	75.8	33.0
		51.2	52.7	10.6	30.1	
RQ8C LIBRARY STAFF MEMBER		15	57	33	411	516
		2.9	11.0	6.4	79.7	11.7
		36.6	9.4	35.1	11.2	
RQ8D PERSON NEARBY		6	13	2	175	196
		3.1	6.6	1.0	89.3	4.4
		14.6	2.1	2.1	4.8	
RQ8E I DID NOT GET HELP		9	248	13	1278	1548
		0.6	16.0	0.8	82.6	35.1
		22.0	40.7	13.8	34.8	
COLUMN TOTAL		41	609	94	3668	4412
		0.9	13.8	2.1	83.1	100.0

PERCENTS AND TOTALS BASED ON RESPONDENTS

4412 VALID CASES 289 MISSING CASES

FILE FINAL (CREATION DATE = 08/03/82)

* * * * * * * * * * * C R O S S T A B U L A T I O N * * * * * * * * * * *
QUEST53 (TABULATING 1) I LEARNED HOW TO USE THIS COMP CAT:
BY LIBSYS2 RECODED LIBRARY-SYSTEM
* PAGE 1 OF 1

	LIBSYS2				
QUEST53	COUNT / ROW PCT / COL PCT	1 DARTHMOUTH	2 NORTHWESTERN	3 STANFORD	4 OTHER ARL LIBS	ROW TOTAL
RQ53A FROM A FRIEND		6 1.0 15.0	85 13.5 14.1	9 1.4 10.0	531 84.2 15.3	631 15.0
RQ53B BY PRINTED INSTR		11 0.5 27.5	149 6.4 24.7	66 2.8 73.3	2115 90.3 60.9	2341 55.7
RQ53C BY INSTR ON TERMINAL		14 1.0 35.0	366 27.1 60.6	10 0.7 11.1	962 71.2 27.7	1352 32.2
RQ53D FROM LIBRARY STAFF		16 1.9 40.0	111 12.9 18.4	41 4.8 45.6	690 80.4 19.9	858 20.4
RQ53E FROM LIBRARY COURSE		0 0.0 0.0	22 7.3 3.6	6 2.0 6.7	274 90.7 7.9	302 7.2
RQ53G BY MYSELF		9 1.0 22.5	138 15.8 22.8	11 1.3 12.2	718 82.0 20.7	876 20.8
COLUMN TOTAL		40 1.0	604 14.4	90 2.1	3471 82.5	4205 100.0

PERCENTS AND TOTALS BASED ON RESPONDENTS

4205 VALID CASES 496 MISSING CASES

Appendix D

SPSS REPORTS FOR CHAPTER 4: PERCEIVED PROBLEMS

THIS APPENDIX CONTAINS REPORTS FOR THE FOLLOWING TABLES IN CHAPTER 4:

Table 16: Highly Ranked Retrieval Feature Problems
Table 17: Highly Ranked Library Service Problems
Table 18: Highly Ranked Terminal Environment Problems
Table 19: Problem Features Ranked by a Given Percent of Users

FILE FINAL (CREATION DATE = 08/03/82)

* * * * * * * * * * * * C R O S S T A B U L A T I O N * * * * * * * * * * * *
QUEST43 (TABULATING 1) WHEN I USE THE COMPUTER CATALOG TERMINAL
BY LIBSYS2 RECODED LIBRARY-SYSTEM
* PAGE 1 OF 1

LIBSYS2

QUEST43 / COUNT / ROW PCT / COL PCT	DARTMOUTH	NORTHWESTERN	STANFORD	OTHER ARL LIBS	ROW TOTAL
	1	2	3	4	
RQ43A KEYBOARD CONFUSING	3	71	18	299	391
	0.8	18.2	4.6	76.5	9.8
	7.7	12.2	20.7	9.1	
RQ43B GLARE ON SCREEN	0	43	7	284	334
	0.0	12.9	2.1	85.0	8.4
	0.0	7.4	8.0	8.7	
RQ43C LETTERS EASY TO READ	37	549	77	2864	3527
	1.0	15.6	2.2	81.2	88.5
	94.9	94.0	88.5	87.4	
RQ43D LIGHTING TOO BRIGHT	3	31	5	323	362
	0.8	8.6	1.4	89.2	9.1
	7.7	5.3	5.7	9.9	
RQ43E WRITING SPACE OK	17	352	65	2165	2599
	0.7	13.5	2.5	83.3	65.2
	43.6	60.3	74.7	66.1	
RQ43F NOISE DISTRACTING	3	56	10	396	465
	0.6	12.0	2.2	85.2	11.7
	7.7	9.6	11.5	12.1	
RQ43G TABLE HEIGHT RIGHT	0	25	8	310	343
	0.0	7.3	2.3	90.4	8.6
	0.0	4.3	9.2	9.5	
RQ43H PRINTER EASY TO USE	0	0	0	728	728
	0.0	0.0	0.0	100.0	18.3
	0.0	0.0	0.0	22.2	
COLUMN TOTAL	39	584	87	3277	3987
	1.0	14.6	2.2	82.2	100.0

PERCENTS AND TOTALS BASED ON RESPONDENTS

3987 VALID CASES 714 MISSING CASES

POSITIVELY PHRASED LIKERT QUESTIONS
(I.E., XXX IS EASY)
(MISSING VALS EXCLUDED)

	QST12 SRCH BY AUTH.	QST14 SRCH BY CALL NUMB.	QST16 REMEM BER COM-MANDS	QST18 SCAN-NING THRU LONG DISP.	QST20 R.DUC ING RE-SULTS	QST22 USING CODES OR ABREV	QST23 ABREV ON SCRN.	QST25 SRCH WITH TRUN-CATE	QST27 REMEM BER EXACT ORDER	QST29 UNDER STAND ING DISP SING.	QST31 INTER RUPT DISP.	QST33 KNOW WHATS INC-LUDED	QST34 ORDER OF DISP. ITEMS	QST39 AVAIL OF SIGNS ADE-QUATE
ABFR														
TOTA	29	13	40	32	25	35	38	27	33	38	30	51	37	39
-2	4	1	3	6	3	2	3	4	1	1	3	1	1	5
-1	2	0	12	13	5	5	4	7	12	5	6	16	8	17
0	4	8	6	6	8	9	10	5	9	2	8	10	13	7
1	11	2	12	5	7	13	16	8	8	24	9	3	12	9
2	8	2	7	2	2	6	5	3	3	6	4	1	3	1
RELF														
TOTA	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
-2	13.79	7.69	7.50	18.75	12.00	5.71	7.89	14.81	3.03	2.63	10.00	3.23	2.70	12.82
-1	6.90	0.0	30.00	40.63	20.00	14.29	10.53	25.93	36.36	13.16	20.00	51.61	21.62	43.59
0	13.79	61.54	15.00	18.75	32.00	25.71	26.32	18.52	27.27	5.26	26.67	32.26	35.14	17.95
1	37.93	15.38	30.00	15.63	28.00	37.14	42.11	29.63	24.24	63.16	30.00	9.68	32.43	23.08
2	27.59	15.38	17.50	6.25	8.00	17.14	13.16	11.11	9.09	15.79	13.33	3.23	8.11	2.56
MEAN	.59	.31	.20	-.50	-.00	.46	.42	-.04	-.00	.76	.17	-.42	.22	-.41
STDE	1.35	1.03	1.26	1.16	1.15	1.12	1.11	1.29	1.06	.97	1.21	.85	.98	1.07
SKEW	-.851	-.194	-.077	.589	-.176	-.485	-.675	-.044	.335	-1.18	-.215	.960	-.082	.367
KURT	-.361	1.588	-1.22	-.434	-.645	-.368	-.015	-1.14	-.801	1.086	-.794	1.001	-.495	-.810
MEDI	.9	.2	.3	-.7	.1	.6	.6	0.0	-.1	1.0	.3	-.6	.2	-.6
MODE	1	0	-1	-1	0	1	1	1	-1	1	1	-1	0	-1

POSITIVELY PHRASED LIKERT QUESTIONS
(I.E., XXX IS EASY)
(MISSING VALS EXCLUDED)

	QST12 SRCH BY AUTH.	QST14 SRCH BY CALL NUMB.	QST16 REMEM BER COM-MANDS	QST18 SCAN-NING THRU LONG DISP.	QST20 REDUC ING RE-SULTS	QST22 USING CODES OR ABREV	QST23 ABREV ON SCRN.	QST25 SRCH WITH TRUN-CATE	QST27 REMEM BER EXACT ORDER	QST29 UNDER STAND ING DISP SING.	QST31 INTER RUPT DISP.	QST33 KNOW WHATS INC-LUDED	QST34 ORDER OF DISP. ITEMS	QST39 AVAIL OF SIGNS ADE-QUATE
ABFR														
TOTA	598	476	586	563	481	552	597	500	555	573	510	570	589	553
-2	17	19	11	26	16	14	9	22	6	3	12	27	7	21
-1	30	52	97	143	101	65	62	112	86	30	80	133	42	96
0	30	89	93	107	143	90	74	117	113	46	102	154	72	113
1	285	148	262	233	175	297	363	195	288	354	246	209	399	287
2	236	168	123	54	46	86	89	54	62	140	70	47	69	36
RELF														
TOTA	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
-2	2.84	3.99	1.88	4.62	3.33	2.54	1.51	4.40	1.08	.52	2.35	4.74	1.19	3.80
-1	5.02	10.92	16.55	25.40	21.00	11.78	10.39	22.40	15.50	5.24	15.69	23.33	7.13	17.36
0	5.02	18.70	15.87	19.01	29.73	16.30	12.40	23.40	20.36	8.03	20.00	27.02	12.22	20.43
1	47.66	31.09	44.71	41.39	36.38	53.80	60.80	39.00	51.89	61.78	48.24	36.67	67.74	51.90
2	39.46	35.29	20.99	9.59	9.56	15.58	14.91	10.80	11.17	24.43	13.73	8.25	11.71	6.51
MEAN	1.16	.83	.66	.26	.28	.68	.77	.29	.57	1.04	.55	.20	.82	.40
STDE	.94	1.14	1.04	1.08	1.01	.96	.88	1.07	.92	.76	.99	1.04	.77	.97
SKEW	-1.52	-.743	-.572	-.293	-.211	-.829	-.994	-.289	-.572	-1.07	-.575	-.226	-1.22	-.693
KURT	2.514	-.339	-.522	-.913	-.652	.304	.873	-.778	-.307	1.982	-.316	-.747	2.089	-.277
MEDI	1.3	1.0	.9	.5	.4	.9	.9	.5	.8	1.1	.7	.3	.9	.7
MODE	1	2	1	1	1	1	1	1	1	1	1	1	1	1

POSITIVELY PHRASED LIKERT QUESTIONS
(I.E., XXX IS EASY)
(MISSING VALS EXCLUDED)

	QST12 SRCH BY AUTH.	QST14 SRCH BY CALL NUMB.	QST16 REMEM BER COM-MANDS	QST18 SCAN-NING THRU LONG DISP.	QST20 REDUC ING RE-SULTS	QST22 USING CODES OR ABREV	QST23 ABREV ON SCRN.	QST25 SRCH WITH TRUN-CATE	QST27 REMEM BER EXACT ORDER	QST29 UNDER STAND ING DISP SING.	QST31 INTER RUPT DISP.	QST33 KNOW WHATS INC-LUDED	QST34 ORDER OF DISP. ITEMS	QST39 AVAIL OF SIGNS ADE-QUATE
ABFR														
TOTA	86	34	87	76	57	82	87	62	79	82	63	80	85	87
-2	1	1	4	7	5	0	7	0	1	0	3	4	5	11
-1	7	4	22	28	9	27	28	13	16	9	24	28	13	20
0	4	13	19	9	19	14	19	14	16	11	13	23	24	8
1	55	13	33	24	19	31	23	28	39	53	19	16	37	46
2	19	3	9	8	5	10	10	7	7	9	4	9	6	2
RELF														
TOTA	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
-2	1.16	2.94	4.60	9.21	8.77	0.0	8.05	0.0	1.27	0.0	4.76	5.00	5.88	12.64
-1	8.14	11.76	25.29	36.84	15.79	32.93	32.18	20.97	20.25	10.98	38.10	35.00	15.29	22.99
0	4.65	38.24	21.84	11.84	33.33	17.07	21.84	22.58	20.25	13.41	20.63	28.75	28.24	9.20
1	63.95	38.24	37.93	31.58	33.33	37.80	26.44	45.16	49.37	64.63	30.16	20.00	43.53	52.87
2	22.09	8.82	10.34	10.53	8.77	12.20	11.49	11.29	8.86	10.98	6.35	11.25	7.06	2.30
MEAN	.98	.38	.24	-.03	.18	.29	.01	.47	.44	.76	-.05	-.02	.31	.09
STDE	.84	.92	1.09	1.22	1.09	1.06	1.18	.95	.96	.79	1.07	1.10	1.01	1.17
SKEW	-1.30	-.372	-.222	.096	-.362	.022	.109	-.257	-.463	-.894	.179	.341	-.581	-.586
KURT	2.217	.210	-.886	-1.23	-.421	-1.34	-1.01	-.923	-.639	.588	-1.02	-.755	-.218	-1.12
MEDI	1.1	.4	.4	-.2	.3	.5	-.1	.6	.7	.9	-.2	-.2	.5	.6
MODE	1	0	1	-1	0	1	-1	1	1	1	-1	-1	1	1

POSITIVELY PHRASED LIKERT RQUESTIONS
(I.E., XXX IS EASY)
(MISSING VALS EXCLUDED)

	RQ12 SRCH BY AUTH.	RQ14 SRCH BY CALL NUMB.	RQ16 REMEM BER COM-MANDS	RQ18 SCAN-NING THRU LONG DISP.	RQ20 REDUC ING RE-SULTS	RQ22 USING CODES OR ABREV	RQ23 ABREV ON SCRN.	RQ25 SRCH WITH TRUN-CATE	RQ27 REMEM BER EXACT ORDER	RQ29 UNDER STAND ING DISP SING.	RQ31 INTER RUPT DISP.	RQ33 KNOW WHATS INC-LUDED	RQ34 ORDER OF DISP. ITEMS	RQ39 AVAIL OF SIGNS ADE-QUATE
ABFR														
TOTA	4157	2348	4080	4031	3540	3983	4137	3485	3929	4022	3618	3876	4090	3953
-2	106	105	165	263	219	103	122	223	95	65	232	284	108	219
-1	287	194	682	910	778	470	484	742	643	296	680	1144	401	606
0	389	499	736	792	1038	717	665	1035	815	437	697	1087	723	593
1	1948	839	1793	1605	1172	2007	2196	1135	1903	2340	1502	1096	2308	2082
2	1427	711	704	461	333	686	670	350	473	884	507	265	550	453
RELF														
TOTA	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
-2	2.55	4.47	4.04	6.52	6.19	2.59	2.95	6.40	2.42	1.62	6.41	7.33	2.64	5.54
-1	6.90	8.26	16.72	22.58	21.98	11.80	11.70	21.29	16.37	7.36	18.79	29.51	9.80	15.33
0	9.36	21.25	18.04	19.65	29.32	18.00	16.07	29.70	20.74	10.87	19.26	28.04	17.68	15.00
1	46.86	35.73	43.95	39.82	33.11	50.39	53.08	32.57	48.43	58.18	41.51	28.28	56.43	52.67
2	34.33	30.28	17.25	11.44	9.41	17.22	16.20	10.04	12.04	21.98	14.01	6.84	13.45	11.46
MEAN	1.04	.79	.54	.27	.18	.68	.68	.19	.51	.92	.38	-.02	.68	.49
STDE	.97	1.10	1.08	1.13	1.07	.98	.98	1.08	.98	.87	1.13	1.07	.92	1.06
SKEW	-1.19	-.767	-.560	-.339	-.196	-.749	-.838	-.199	-.558	-1.09	-.466	.020	-.918	-.780
KURT	1.239	-.038	-.495	-.852	-.705	.121	.285	-.693	-.354	1.386	-.687	-.827	.688	-.174
MEDI	1.2	.9	.8	.5	.2	.8	.9	.3	.7	1.0	.6	-.0	.9	.8
MODE	1	1	1	1	1	1	1	1	1	1	1	-1	1	1

NEGATIVELY PHRASED LIKERT RQUESTIONS
(I.E., XXX IS DIFFICULT)
(MISSING VALS EXCLUDED)

	RQ11 SRCH BY TITLE	RQ13 SRCH BY SUBJ.	RQ15 SRCH BY AUTH/ TITLE	RQ17 FIND SUBJ. TERM	RQ19 INCR. RE-SULTS	RQ21 UNDER STAND ING EXPLN	RQ24 LOCAT CALL NUMB.	RQ26 USING LOGIC TERMS	RQ28 UNDER STAND ING INIT. INSTR	RQ30 UNDER STAND ING DIS-PLAY	RQ32 TYP-ING EXACT SPEL.	RQ35 DIS-PLAY MSG.S TOO LONG	RQ36 SEL-ECT FROM LIST	RQ37 ENTER ING COM-ANDS	RQ38 RESP-ONSE TOO SLOW	RQ40 SIGNS AND BRO-CHURE	RQ41 STAFF AD-VICE	RQ42 HARD TO FIND FREE TERM
ABFR																		
TOTA	4115	4003	3200	3961	1433	4190	4029	1829	1608	3987	4096	4008	3918	3761	4114	3876	3193	3997
-2	1442	823	1142	295	86	1180	1130	326	528	791	792	599	414	397	606	791	720	557
-1	1661	1222	1117	1052	255	2069	1883	566	737	2166	1796	2075	1860	1554	1840	1892	1290	1670
0	494	615	564	786	384	416	464	535	166	604	636	927	912	788	686	710	785	701
1	405	998	282	1341	571	398	415	284	127	345	708	314	603	826	689	349	276	725
2	113	345	95	487	137	127	137	118	50	81	164	93	129	196	293	134	122	344
RELF																		
TOTA	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
-2	35.04	20.56	35.69	7.45	6.00	28.16	28.05	17.82	32.84	19.84	19.34	14.95	10.57	10.56	14.73	20.41	22.55	13.94
-1	40.36	30.53	34.91	26.56	17.79	49.38	46.74	30.95	45.83	54.33	43.85	51.77	47.47	41.32	44.73	48.81	40.40	41.78
0	12.00	15.36	17.62	19.84	26.80	9.93	11.52	29.25	10.32	15.15	15.53	23.13	23.28	20.95	16.67	18.32	24.59	17.54
1	9.84	24.93	8.81	33.86	39.85	9.50	10.30	15.53	7.90	8.65	17.29	7.83	15.39	21.96	16.75	9.00	8.64	18.14
2	2.75	8.62	2.97	12.29	9.56	3.03	3.40	6.45	3.11	2.03	4.00	2.32	3.29	5.21	7.12	3.46	3.82	8.61
MEAN	-.95	-.29	-.92	.17	.29	-.90	-.86	-.38	-.97	-.81	-.57	-.69	-.47	-.30	-.43	-.74	-.69	-.34
STDE	1.05	1.28	1.07	1.17	1.06	1.01	1.05	1.14	1.01	.92	1.10	.90	.98	1.08	1.14	.99	1.03	1.18
SKEW	.973	.220	.844	-.151	-.421	1.055	.968	.320	1.122	.921	.585	.770	.579	.365	.592	.848	.663	.493
KURT	.280	-1.16	.010	-1.02	-.525	.689	.376	-.646	.885	.748	-.541	.610	-.249	-.770	-.559	.409	.024	-.744
MEDI	-1.1	-.5	-1.1	.3	.5	-1.1	-1.0	-.5	-1.1	-.9	-.8	-.8	-.7	-.5	-.7	-.9	-.8	-.6
MODE	-1	-1	-2	1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

NEGATIVELY PHRASED LIKERT QUESTIONS
(I.E., XXX IS DIFFICULT)
(MISSING VALS EXCLUDED)

	QST11 SRCH BY TITLE	QST13 SRCH BY SUBJ.	QST15 SRCH BY AUTH/ TITLE	QST17 FIND SUBJ. TERM	QST19 INCR. RE-SULTS	QST21 UNDER STAND ING EXPLN	QST24 LOCAT CALL NUMB.	QST26 USING LOGIC TERMS	QST28 UNDER STAND ING INIT. INSTR	QST30 UNDER STAND ING DIS-PLAY	QST32 TYP-ING EXACT SPEL.	QST35 DIS-PLAY MSG,S TOO LONG	QST36 SEL-ECT FROM LIST	QST37 ENTER ING COM-ANDS	QST38 RESP-ONSE TOO SLOW	QST40 SIGNS AND BRO-CHURE	QST41 STAFF AD-VICE	QST42 HARD TO FIND FREE TERM
ABFR																		
TOTA	82	70	63	68	62	81	83	55	75	76	78	81	82	81	87	85	67	75
-2	23	8	17	4	2	9	10	4	5	13	17	8	5	3	3	12	19	5
-1	42	22	28	15	20	30	27	19	28	40	31	39	35	30	13	29	31	33
0	8	11	12	16	18	14	9	21	13	11	15	25	22	18	3	8	11	17
1	7	27	4	26	16	21	25	9	23	11	15	9	15	25	24	23	3	13
2	2	2	2	7	6	7	12	2	6	1	0	0	5	5	44	13	3	7
RELF																		
TOTA	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
-2	28.05	11.43	26.98	5.88	3.23	11.11	12.05	7.27	6.67	17.11	21.79	9.88	6.10	3.70	3.45	14.12	28.36	6.67
-1	51.22	31.43	44.44	22.06	32.26	37.04	32.53	34.55	37.33	52.63	39.74	48.15	42.68	37.04	14.94	34.12	46.27	44.00
0	9.76	15.71	19.05	23.53	29.03	17.28	10.84	38.18	17.33	14.47	19.23	30.86	26.83	22.22	1.45	9.41	16.42	22.67
1	8.54	38.57	6.35	38.24	25.81	25.93	30.12	16.36	30.67	14.47	19.23	11.11	18.29	30.86	27.59	27.06	4.48	17.33
2	2.44	2.86	3.17	10.29	9.68	8.64	14.46	3.64	8.00	1.32	0.0	0.0	6.10	6.17	50.57	15.29	4.48	9.33
MEAN	-.94	-.10	-.86	.25	.06	-.16	.02	-.25	-.04	-.70	-.64	-.57	-.24	-.01	1.07	-.05	-.90	-.21
STDE	.97	1.13	1.00	1.10	1.05	1.19	1.31	.95	1.13	.97	1.03	.82	1.03	1.04	1.21	1.34	1.02	1.11
SKEW	1.112	-.169	.912	-.309	.215	.227	.022	.269	.138	.718	.317	.293	.511	.161	-1.15	.116	1.121	.561
KURT	1.090	-1.23	.729	-.745	-.829	-1.03	-1.30	-.163	-1.09	-.066	-1.02	-.383	-.445	-1.02	.057	-1.33	1.276	-.585
MEDI	-1.1	-.0	-1.0	.4	0.0	-.4	0.0	-.3	-.2	-.9	-.8	-.7	-.5	-.1	1.5	-.3	-1.0	-.5
MODE	-1	1	-1	1	-1	-1	-1	0	-1	-1	-1	-1	-1	-1	2	-1	-1	-1

NEGATIVELY PHRASED LIKERT QUESTIONS
(I.E., XXX IS DIFFICULT)
(MISSING VALS EXCLUDED)

	QST11 SRCH BY TITLE	QST13 SRCH BY SUBJ.	QST15 SRCH BY AUTH/ TITLE	QST17 FIND SUBJ. TERM	QST19 INCR. RE- SULTS	QST21 UNDER STAND ING EXPLN	QST24 LOCAT CALL NUMB.	QST26 USING LOGIC TERMS	QST28 UNDER STAND ING INIT. INSTR	QST30 UNDER STAND ING DIS- PLAY	QST32 TYP- ING EXACT SPEL.	QST35 DIS- PLAY MSG.S TOO LONG	QST36 SEL- ECT FROM LIST	QST37 ENTER ING COM- ANDS	QST38 RESP- ONSE TOO SLOW	QST40 SIGNS AND BRO- CHURE	QST41 STAFF AD- VICE	QST42 HARD TO FIND FREE TERM
ABSR																		
TOTA	596	553	464	543	479	604	586	365	589	574	586	588	575	550	598	525	459	590
-2	258	96	193	41	27	172	177	50	142	117	100	101	55	57	77	53	87	54
-1	232	148	154	135	91	306	312	113	322	327	261	339	312	271	263	239	201	286
0	46	89	90	116	156	60	51	142	63	77	88	106	108	101	98	168	115	111
1	53	173	11	187	184	55	41	51	53	45	114	37	90	102	117	57	45	113
2	7	47	16	64	21	11	5	9	9	8	23	5	10	19	43	8	11	26
RELF																		
TOTA	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
-2	43.29	17.36	41.59	7.55	5.64	28.48	30.20	13.70	24.11	20.38	17.06	17.18	9.57	10.36	12.88	10.10	19.95	9.15
-1	38.93	26.76	33.19	24.86	19.00	50.66	53.24	30.96	54.67	56.97	44.54	57.65	54.26	49.27	43.98	45.52	43.79	48.47
0	7.72	16.09	19.40	21.36	32.57	9.93	8.70	38.90	10.70	13.41	19.02	18.03	18.78	18.36	16.39	32.00	25.05	18.81
1	8.89	31.28	2.37	34.44	38.41	9.11	7.00	13.97	9.00	7.84	19.45	6.29	15.65	18.55	19.57	10.86	9.80	19.15
2	1.17	8.50	3.45	11.79	4.38	1.82	.85	2.47	1.53	1.39	3.92	.85	1.74	3.45	7.19	1.52	2.40	4.41
MEAR	-1.14	-.13	-1.07	.18	.17	-.95	-1.05	-.39	-.91	-.87	-.51	-.84	-.54	-.45	-.36	-.52	-.67	-.39
STDE	.98	1.27	1.01	1.16	.97	.95	.86	.97	.92	.87	1.10	.81	.93	1.02	1.15	.87	.97	1.03
SKEW	1.170	-.014	1.102	-.191	-.426	1.034	1.073	.116	1.004	.964	.529	.801	.686	.581	.504	.436	.583	.572
KURT	.759	-1.22	1.012	-.954	-.448	.785	1.228	-.387	.873	1.026	-.657	.928	-.152	-.457	-.723	-.005	-.007	-.509
MEDI	-1.3	-.1	-1.2	.3	.3	-1.1	-1.1	-.4	-1.0	-1.0	-.8	-.9	-.8	-.7	-.7	-.6	-.8	-.7
MODE	-2	1	-2	1	1	-1	-1	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

NEGATIVELY PHRASED LIKERT QUESTIONS
(I.E., XXX IS DIFFICULT)
(MISSING VALS EXCLUDED)

	QST11 SRCH BY TITLE	QST13 SRCH BY SUBJ.	QST15 SRCH BY AUTH/ TITLE	QST17 FIND SUBJ. TERM	QST19 INCR. RE-SULTS	QST21 UNDER STAND ING EXPLN	QST24 LOCAT CALL NUMB.	QST26 USING LOGIC TERMS	QST28 UNDER STAND ING INIT. INSTR	QST30 UNDER STAND ING DIS-PLAY	QST32 TYP-ING EXACT SPEL.	QST35 DIS-PLAY MSG.S TOO LONG	QST36 SEL-ECT FROM LIST	QST37 ENTER ING COM-ANDS	QST38 RESP-ONSE TOO SLOW	QST40 SIGNS AND BRO-CHURE	QST41 STAFF AD-VICE	QST42 HARD TO FIND FREE TERM
ABFR																		
TOTA	23	37	21	36	29	40	29	22	38	34	34	38	36	38	40	33	29	29
-2	9	8	4	5	3	7	4	5	7	7	7	3	2	3	4	2	6	5
-1	8	11	8	9	4	21	14	9	22	11	12	20	17	12	12	19	17	12
0	4	5	4	6	8	5	6	6	4	10	7	7	11	7	6	5	4	6
1	2	11	5	16	11	4	3	2	5	5	8	7	5	13	13	6	1	5
2	0	2	0	0	3	3	2	0	0	1	0	1	1	3	5	1	1	1
RELF																		
TOTA	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
-2	39.13	21.62	19.05	13.89	10.34	17.50	13.79	22.73	18.42	20.59	20.59	7.89	5.56	7.89	10.00	6.06	20.69	17.24
-1	34.78	29.73	38.10	25.00	13.79	52.50	48.28	40.91	57.89	32.35	35.29	52.63	47.22	31.58	30.00	57.58	58.62	41.38
0	17.39	13.51	19.05	16.67	27.59	12.50	20.69	27.27	10.53	29.41	20.59	18.42	30.56	18.42	15.00	15.15	13.79	20.69
1	8.70	29.73	23.81	44.44	37.93	10.00	10.34	9.09	13.16	14.71	23.53	18.42	13.89	34.21	32.50	18.18	3.45	17.24
2	0.0	5.41	0.0	0.0	10.34	7.50	6.90	0.0	0.0	2.94	0.0	2.63	2.78	7.89	12.50	3.03	3.45	3.45
MEAN	-1.04	-.32	-.52	-.08	.24	-.62	-.52	-.77	-.82	-.53	-.53	-.45	-.39	.03	.07	-.45	-.90	-.52
STDE	.98	1.27	1.08	1.13	1.15	1.13	1.09	.92	.90	1.08	1.08	.98	.90	1.15	1.25	.97	.90	1.09
SKEW	.735	.140	.200	-.456	-.509	1.011	.848	.305	.807	.311	.157	.668	.634	-.054	-.065	.845	1.363	.492
KURT	-.353	-1.28	-1.17	-1.29	-.419	.422	.315	-.567	.187	-.556	-1.22	-.266	.152	-1.06	-1.17	-.063	3.040	-.464
MEDI	-1.2	-.5	-.7	.2	.4	-.9	-.8	-.8	-1.0	-.6	-.7	-.7	-.6	.1	.2	-.7	-1.0	-.7
MODE	-2	-1	-1	1	1	-1	-1	-1	-1	-1	-1	-1	-1	1	1	-1	-1	-1

Appendix E

SPSS REPORTS FOR CHAPTER 5: PREFERENCES FOR IMPROVEMENT

THIS APPENDIX CONTAINS REPORTS FOR THE FOLLOWING TABLES IN CHAPTER 5:

Table 20: Desired Software Improvements
Table 21: Desired Service Improvements
Table 22: Desired Database Improvements

FILE FINAL (CREATION DATE = 08/03/82)

GROUP QUEST44 ADDITIONAL SYSTEM FEATURES DESIRED:
(VALUE TABULATED = 1)

DICHOTOMY LABEL	NAME	COUNT	PCT OF RESPONSES	PCT OF CASES
STEP BY STEP INSTRUC	QST44A	44	13.6	49.4
SEARCH BY TITLE WORD	QST44B	15	4.6	16.9
SUBJECT WORD SEARCH	QST44C	25	7.7	28.1
LIMIT BY DATE OF PUB	QST44D	13	4.0	14.6
LIMIT BY LANGUAGE	QST44E	6	1.9	6.7
JOURNAL TITLE ABBRV	QST44F	26	8.0	29.2
CHANGE DISPLAY ORDER	QST44G	5	1.5	5.6
VIEW RELATED WORDS	QST44H	32	9.9	36.0
SRCH FOR ILLUS & BIB	QST44I	15	4.6	16.9
SRCH BY CALL NUMBER	QST44J	9	2.8	10.1
PRINT SEARCH RESULTS	QST44K	37	11.4	41.6
SRCH CONTENTS-INDEX	QST44L	36	11.1	40.4
IF BOOK CHECKED OUT	QST44M	43	13.3	48.3
LIB LOCATION OF BOOK	QST44N	18	5.6	20.2
	TOTAL RESPONSES	324	100.0	364.0

6 MISSING CASES 89 VALID CASES

FILE FINAL (CREATION DATE = 08/03/82)

GROUP QUEST44 ADDITIONAL SYSTEM FEATURES DESIRED:
(VALUE TABULATED = 1)

DICHOTOMY LABEL	NAME	COUNT	PCT OF RESPONSES	PCT OF CASES
STEP BY STEP INSTRUC	QST44A	70	3.6	11.7
SEARCH BY TITLE WORD	QST44B	158	8.1	26.4
SUBJECT WORD SEARCH	QST44C	217	11.1	36.3
LIMIT BY DATE OF PUB	QST44D	91	4.7	15.2
LIMIT BY LANGUAGE	QST44E	65	3.3	10.9
JOURNAL TITLE ABBRV	QST44F	159	8.1	26.6
CHANGE DISPLAY ORDER	QST44G	41	2.1	6.9
VIEW RELATED WORDS	QST44H	255	13.1	42.6
SRCH FOR ILLUS & BIB	QST44I	95	4.9	15.9
SRCH BY CALL NUMBER	QST44J	78	4.0	13.0
PRINT SEARCH RESULTS	QST44K	197	10.1	32.9
SRCH CONTENTS-INDEX	QST44L	290	14.9	48.5
IF BOOK CHECKED OUT	QST44M	102	5.2	17.1
LIB LOCATION OF BOOK	QST44N	108	5.5	18.1
NONE	QST44O	26	1.3	4.3
	TOTAL RESPONSES	1952	100.0	326.4

18 MISSING CASES 598 VALID CASES

FILE FINAL (CREATION DATE = 08/03/82)

GROUP QUEST44 ADDITIONAL SYSTEM FEATURES DESIRED:
(VALUE TABULATED = 1)

DICHOTOMY LABEL	NAME	COUNT	PCT OF RESPONSES	PCT OF CASES
STEP BY STEP INSTRUC	QST44A	9	6.7	22.5
SEARCH BY TITLE WORD	QST44B	5	3.7	12.5
SUBJECT WORD SEARCH	QST44C	12	9.0	30.0
LIMIT BY DATE OF PUB	QST44D	9	6.7	22.5
LIMIT BY LANGUAGE	QST44E	7	5.2	17.5
JOURNAL TITLE ABBRV	QST44F	6	4.5	15.0
CHANGE DISPLAY ORDER	QST44G	4	3.0	10.0
VIEW RELATED WORDS	QST44H	17	12.7	42.5
SRCH FOR ILLUS & BIB	QST44I	4	3.0	10.0
SRCH BY CALL NUMBER	QST44J	3	2.2	7.5
PRINT SEARCH RESULTS	QST44K	18	13.4	45.0
SRCH CONTENTS-INDEX	QST44L	12	9.0	30.0
IF BOOK CHECKED OUT	QST44M	16	11.9	40.0
LIB LOCATION OF BOOK	QST44N	11	8.2	27.5
NONE	QST44O	1	0.7	2.5
	TOTAL RESPONSES	134	100.0	335.0

1 MISSING CASES 40 VALID CASES

RECODED VARIABLES
FILE FINAL (CREATION DATE = 08/03/82)

GROUP RQUEST44 ADDITIONAL SYSTEM FEATURES DESIRED:
(VALUE TABULATED = 1)

DICHOTOMY LABEL	NAME	COUNT	PCT OF RESPONSES	PCT OF CASES
STEP BY STEP INSTRUC	RQ44A	725	5.7	17.6
SEARCH BY TITLE WORD	RQ44B	646	5.1	15.7
SUBJECT WORD SEARCH	RQ44C	960	7.6	23.4
LIMIT BY DATE OF PUB	RQ44D	537	4.2	13.1
LIMIT BY LANGUAGE	RQ44E	572	4.5	13.9
JOURNAL TITLE ABBRV	RQ44F	1016	8.0	24.7
CHANGE DISPLAY ORDER	RQ44G	450	3.5	10.9
VIEW RELATED WORDS	RQ44H	1960	15.4	47.7
SRCH FOR ILLUS & BIBL	RQ44I	767	6.0	18.7
SRCH BY CALL NUMBER	RQ44J	428	3.4	10.4
PRINT SEARCH RESULTS	RQ44K	1088	8.6	26.5
SRCH CONTENTS-INDEX	RQ44L	1814	14.3	44.1
IF BOOK CHECKED OUT	RQ44M	1019	8.0	24.8
LIB LOCATION OF BOOK	RQ44N	530	4.2	12.9
NONE	RQ44O	200	1.6	4.9
	TOTAL RESPONSES	12712	100.0	309.3

591 MISSING CASES 4110 VALID CASES

FILE FINAL (CREATION DATE = 08/03/82)

GROUP QUEST45 COMPUTER CAT SERVICE IMPROVEMENTS DESIRE
(VALUE TABULATED = 1)

DICHOTOMY LABEL	NAME	COUNT	PCT OF RESPONSES	PCT OF CASES
MORE TERMINALS	QST45A	55	27.8	63.2
TERMS IN OTHER LOCAT	QST45B	32	16.2	36.8
TERMS OUTSIDE LIBR	QST45C	25	12.6	28.7
COMMAND CHART POSTED	QST45D	37	18.7	42.5
MANUAL AT TERMINAL	QST45E	14	7.1	16.1
MANUAL FOR PURCHASE	QST45F	5	2.5	5.7
TRAINING SESSIONS	QST45G	15	7.6	17.2
A-V TRAINING PROGR	QST45H	6	3.0	6.9
NONE	QST45I	9	4.5	10.3
	TOTAL RESPONSES	198	100.0	227.6

8 MISSING CASES 87 VALID CASES

FILE FINAL (CREATION DATE = 08/03/82)

GROUP QUEST45 COMPUTER CAT SERVICE IMPROVEMENTS DESIRE
(VALUE TABULATED = 1)

DICHOTOMY LABEL	NAME	COUNT	PCT OF RESPONSES	PCT OF CASES
MORE TERMINALS	QST45A	283	23.0	47.2
TERMS IN OTHER LOCAT	QST45B	341	27.8	56.9
TERMS OUTSIDE LIBR	QST45C	242	19.7	40.4
COMMAND CHART POSTED	QST45D	103	8.4	17.2
MANUAL AT TERMINAL	QST45E	92	7.5	15.4
MANUAL FOR PURCHASE	QST45F	20	1.6	3.3
TRAINING SESSIONS	QST45G	38	3.1	6.3
A-V TRAINING PROGR	QST45H	21	1.7	3.5
NONE	QST45I	88	7.2	14.7
	TOTAL RESPONSES	1228	100.0	205.0

17 MISSING CASES 599 VALID CASES

FILE FINAL (CREATION DATE = 08/03/82)

GROUP QUEST45 COMPUTER CAT SERVICE IMPROVEMENTS DESIRE
(VALUE TABULATED = 1)

DICHOTOMY LABEL	NAME	COUNT	PCT OF RESPONSES	PCT OF CASES
MORE TERMINALS	QST45A	24	21.4	60.0
TERMS IN OTHER LOCAT	QST45B	16	14.3	40.0
TERMS OUTSIDE LIBR	QST45C	16	14.3	40.0
COMMAND CHART POSTED	QST45D	17	15.2	42.5
MANUAL AT TERMINAL	QST45E	20	17.9	50.0
MANUAL FOR PURCHASE	QST45F	3	2.7	7.5
TRAINING SESSIONS	QST45G	10	8.9	25.0
A-V TRAINING PROGR	QST45H	3	2.7	7.5
NONE	QST45I	3	2.7	7.5
	TOTAL RESPONSES	112	100.0	280.0

1 MISSING CASES 40 VALID CASES

RECODED VARIABLES
FILE FINAL (CREATION DATE = 08/03/82)

GROUP RQUEST45 COMPUTER CAT SERVICE IMPROVEMENTS DESIRE
(VALUE TABULATED = 1)

DICHOTOMY LABEL	NAME	COUNT	PCT OF RESPONSES	PCT OF CASES
MORE TERMINALS	RQ45A	2022	22.4	48.9
TERMS IN OTHER LOCAT	RQ45B	1547	17.2	37.4
TERMS OUTSIDE LIBR	RQ45C	1712	19.0	41.4
COMMAND CHART POSTED	RQ45D	1161	12.9	28.1
MANUAL AT TERMINAL	RQ45E	776	8.6	18.8
MANUAL FOR PURCHASE	RQ45F	307	3.4	7.4
TRAINING SESSIONS	RQ45G	474	5.3	11.5
A-V TRAINING PROGR	RQ45H	392	4.4	9.5
NONE	RQ45I	620	6.9	15.0
	TOTAL RESPONSES	9011	100.0	217.8

563 MISSING CASES 4138 VALID CASES

FILE FINAL (CREATION DATE = 08/03/82)

GROUP QUEST46 ADDITIONAL KINDS OF MATERIALS DESIRED:
(VALUE TABULATED = 1)

DICHOTOMY LABEL	NAME	COUNT	PCT OF RESPONSES	PCT OF CASES
DISSERTATIONS	QST46A	36	15.6	42.4
MOTION PICTURE FILMS	QST46B	12	5.2	14.1
GOV PUBLICATIONS	QST46C	28	12.1	32.9
JOURNAL TITLES	QST46D	40	17.3	47.1
MAPS	QST46E	4	1.7	4.7
MANUSCRIPTS	QST46F	10	4.3	11.8
MUSIC SCORES	QST46G	5	2.2	5.9
NEWSPAPERS	QST46H	24	10.4	28.2
RECORDS OR TAPES	QST46I	7	3.0	8.2
TECHNICAL REPORTS	QST46J	14	6.1	16.5
MORE OLDER BOOKS	QST46K	45	19.5	52.9
NONE	QST46L	5	2.2	5.9
OTHER	QST46M	1	0.4	1.2
	TOTAL RESPONSES	231	100.0	271.8

10 MISSING CASES 85 VALID CASES

FILE FINAL (CREATION DATE = 08/03/82)

GROUP QUEST46 ADDITIONAL KINDS OF MATERIALS DESIRED:
(VALUE TABULATED = 1)

DICHOTOMY LABEL	NAME	COUNT	PCT OF RESPONSES	PCT OF CASES
DISSERTATIONS	QST46A	210	14.3	35.8
MOTION PICTURE FILMS	QST46B	74	5.0	12.6
GOV PUBLICATIONS	QST46C	185	12.6	31.5
JOURNAL TITLES	QST46D	226	15.4	38.5
MAPS	QST46E	39	2.7	6.6
MANUSCRIPTS	QST46F	42	2.9	7.2
MUSIC SCORES	QST46G	51	3.5	8.7
NEWSPAPERS	QST46H	152	10.4	25.9
RECORDS OR TAPES	QST46I	78	5.3	13.3
TECHNICAL REPORTS	QST46J	78	5.3	13.3
MORE OLDER BOOKS	QST46K	272	18.5	46.3
NONE	QST46L	47	3.2	8.0
OTHER	QST46M	13	0.9	2.2
	TOTAL RESPONSES	1467	100.0	249.9

89 MISSING CASES 587 VALID CASES

RECODED VARIABLES
FILE FINAL (CREATION DATE = 08/05/92)

GROUP REQUESTED ADDITIONAL KINDS OF MATERIALS DESIRED:
(VALUE TABULATED = 1)

DICHOTOMY LABEL	NAME	COUNT	PCT OF RESPONSES	PCT OF CASES
DISSERTATIONS	RQAGA	869	9.9	23.1
MOTION PICTURE FILMS	RQAGB	550	6.0	14.1
GOV PUBLICATIONS	RQAGC	1890	19.7	39.8
JOURNAL TITLES	RQAGD	639	7.2	16.8
MAPS	RQAGE	903	9.7	19.3
MANUSCRIPTS	RQAGF	333	3.8	8.9
MUSIC SCORES	RQAGG	309	3.5	8.2
NEWSPAPERS	RQAGH	1183	13.4	31.4
RECORDS OR TAPES	RQAGI	716	8.1	19.0
TECHNICAL REPORTS	RQAGJ	727	8.3	19.3
MORE OLDER BOOKS	RQAGK	1220	13.9	32.4
NONE	RQAGL	360	6.1	9.6
OTHER	RQAGM	110	1.3	3.0
	TOTAL RESPONSES	8789	100.0	233.2

932 MISSING CASES 3768 VALID CASES

FILE FINAL (CREATION DATE = 08/03/82)

GROUP QUEST46 ADDITIONAL KINDS OF MATERIALS DESIRED:
(VALUE TABULATED = 1)

DICHOTOMY LABEL	NAME	COUNT	PCT OF RESPONSES	PCT OF CASES
DISSERTATIONS	QST46A	7	6.9	18.4
MOTION PICTURE FILMS	QST46B	4	3.9	10.5
GOV PUBLICATIONS	QST46C	12	11.8	31.6
JOURNAL TITLES	QST46D	23	22.5	60.5
MAPS	QST46E	2	2.0	5.3
MANUSCRIPTS	QST46F	3	2.9	7.9
MUSIC SCORES	QST46G	2	2.0	5.3
NEWSPAPERS	QST46H	19	18.6	50.0
RECORDS OR TAPES	QST46I	6	5.9	15.8
TECHNICAL REPORTS	QST46J	6	5.9	15.8
MORE OLDER BOOKS	QST46K	16	15.7	42.1
NONE	QST46L	2	2.0	5.3
	TOTAL RESPONSES	102	100.0	268.4

3 MISSING CASES 38 VALID CASES

Appendix F

SPSS REPORTS FOR CHAPTER 6: USER CHARACTERISTICS

THIS APPENDIX CONTAINS REPORTS FOR THE FOLLOWING TABLES IN CHAPTER 6:

Table 23: Users Library Use
Table 24: Users Computer Catalog Use
Table 25: Users Card Catalog Use
Table 26: Users Other Computer Use
Table 27: Users Academic Status
Table 43: Users Academic Focus
Table 44: Users Academic Area
Table 28: Users Age
Table 29: Users Sex
Table 32: Users Education Level

FILE FINAL (CREATION DATE = 08/03/82)

* CROSSTABULATION OF *
RQ48 | COME TO THIS LIBRARY BY LIBSYS2 RECODED LIBRARY-SYSTEM
* PAGE 1 OF 1

RQ48	COUNT / ROW PCT / COL PCT / TOT PCT	LIBSYS2 1. DARTMOUTH	2. NORTHWESTERN	3. STANFORD	4. OTHER ARL LIBS	ROW TOTAL
1. DAILY		15	235	41	1251	1542
		1.0	15.2	2.7	81.1	36.6
		37.5	38.8	44.1	36.0	
		0.4	5.6	1.0	29.7	
2. WEEKLY		19	264	30	1497	1810
		1.0	14.6	1.7	82.7	42.9
		47.5	43.6	32.3	43.0	
		0.5	6.3	0.7	35.5	
3. MONTHLY		3	68	12	432	515
		0.6	13.2	2.3	83.9	12.2
		7.5	11.2	12.9	12.4	
		0.1	1.6	0.3	10.2	
4. 4 TIMES YEAR		1	21	5	175	202
		0.5	10.4	2.5	86.6	4.8
		2.5	3.5	5.4	5.0	
		0.0	0.5	0.1	4.2	
5. ONCE A YEAR		1	3	2	45	51
		2.0	5.9	3.9	88.2	1.2
		2.5	0.5	2.2	1.3	
		0.0	0.1	0.0	1.1	
6. NOT BEFORE TODAY		1	14	3	78	96
		1.0	14.6	3.1	81.3	2.3
		2.5	2.3	3.2	2.2	
		0.0	0.3	0.1	1.9	
COLUMN TOTAL		40	605	93	3478	4216
		0.9	14.4	2.2	82.5	100.0

7 OUT OF 24 (29.2%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 0.484
CHI SQUARE = 14.24812 WITH 15 DEGREES OF FREEDOM SIGNIFICANCE = 0.5068
PEARSON'S R = 0.02962 SIGNIFICANCE = 0.0272

NUMBER OF MISSING OBSERVATIONS = 485

FILE FINAL (CREATION DATE = 08/03/82)

CROSSTABULATION OF RQ49 ! USE THIS COMPUTER CATALOG BY LIBSYS2 RECODED LIBRARY-SYSTEM

RQ49	LIBSYS2	DARTMOUTH	NORTHWESTERN	STANFORD	OTHER ARL LIBS	ROW TOTAL
		1.	2.	3.	4.	
1. EVERY VISIT	COUNT	0	81	5	633	719
	ROW PCT	0.0	11.3	0.7	88.0	17.0
	COL PCT	0.0	13.4	5.4	18.2	
	TOT PCT	0.0	1.9	0.1	15.0	
2. MOST VISITS	COUNT	2	267	17	1405	1691
	ROW PCT	0.1	15.8	1.0	83.1	40.0
	COL PCT	5.0	44.1	18.3	40.3	
	TOT PCT	0.0	6.3	0.4	33.2	
3. OCCASIONALLY	COUNT	13	210	34	1046	1303
	ROW PCT	1.0	16.1	2.6	80.3	30.8
	COL PCT	32.5	34.7	36.6	30.0	
	TOT PCT	0.3	5.0	0.8	24.8	
4. RARELY	COUNT	9	25	14	205	253
	ROW PCT	3.6	9.9	5.5	81.0	6.0
	COL PCT	22.5	4.1	15.1	5.9	
	TOT PCT	0.2	0.6	0.3	4.9	
5. NOT BEFORE TODAY	COUNT	16	23	23	198	260
	ROW PCT	6.2	8.8	8.8	76.2	6.2
	COL PCT	40.0	3.8	24.7	5.7	
	TOT PCT	0.4	0.5	0.5	4.7	
COLUMN TOTAL		40	606	93	3487	4226
		0.9	14.3	2.2	82.5	100.0

2 OUT OF 20 (10.0%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 2.395
CHI SQUARE = 220.04501 WITH 12 DEGREES OF FREEDOM SIGNIFICANCE = 0.0
PEARSON'S R =-0.06920 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 475

FILE FINAL (CREATION DATE = 08/03/82)

CROSSTABULATION OF RQ50 | USE LIB'S BK CRD OR MICRO CAT BY LIBSYS2 RECODED LIBRARY-SYSTEM

RQ50	COUNT / ROW PCT / COL PCT / TOT PCT	LIBSYS2 1. DARTMOUTH	2. NORTHWESTERN	3. STANFORD	4. OTHER ARL LIBS	ROW TOTAL
1. EVERY VISIT		5	36	26	375	442
		1.1	8.1	5.9	84.8	10.5
		12.5	6.0	28.0	10.8	
		0.1	0.9	0.6	8.9	
2. MOST VISITS		14	91	27	740	872
		1.6	10.4	3.1	84.9	20.7
		35.0	15.1	29.0	21.3	
		0.3	2.2	0.6	17.6	
3. OCCASIONALLY		16	267	34	1258	1575
		1.0	17.0	2.2	79.9	37.5
		40.0	44.2	36.6	36.3	
		0.4	6.3	0.8	29.9	
4. RARELY		4	167	3	763	937
		0.4	17.8	0.3	81.4	22.3
		10.0	27.6	3.2	22.0	
		0.1	4.0	0.1	18.1	
5. NOT BEFORE TODAY		1	43	3	332	379
		0.3	11.3	0.8	87.6	9.0
		2.5	7.1	3.2	9.6	
		0.0	1.0	0.1	7.9	
COLUMN TOTAL		40	604	93	3468	4205
		1.0	14.4	2.2	82.5	100.0

2 OUT OF 20 (10.0%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 3.605
CHI SQUARE = 99.73175 WITH 12 DEGREES OF FREEDOM SIGNIFICANCE = 0.0000
PEARSON'S R =-0.02197 SIGNIFICANCE = 0.0772

NUMBER OF MISSING OBSERVATIONS = 495

FILE FINAL (CREATION DATE = 08/03/82)

* C R O S S T A B U L A T I O N O F *
R051 ! USE ANOTHER COMPUTER SYSTEM BY LIBSYS2 RECODED LIBRARY-SYSTEM
* PAGE 1 OF 1

R051	COUNT / ROW PCT / COL PCT / TOT PCT	LIBSYS2 1. DARTMOUTH	2. NORTHWES TERN	3. STANFORD	4. OTHER AR L LIBS	ROW TOTAL
1. DAILY		9	41	11	435	496
		1.8	8.3	2.2	87.7	11.8
		22.5	6.8	12.1	12.6	
		0.2	1.0	0.3	10.4	
2. WEEKLY		15	112	23	634	784
		1.9	14.3	2.9	80.9	18.7
		37.5	18.6	25.3	18.3	
		0.4	2.7	0.5	15.1	
3. MONTHLY		8	96	16	460	580
		1.4	16.6	2.8	79.3	13.8
		20.0	15.9	17.6	13.3	
		0.2	2.3	0.4	11.0	
4. 8 TIMES A YEAR		3	82	10	440	537
		0.6	15.3	1.9	81.9	12.8
		12.5	13.6	11.0	12.7	
		0.1	2.0	0.2	10.5	
5. ONCE A YEAR		0	70	4	312	386
		0.0	18.1	1.0	80.8	9.2
		0.0	11.6	4.4	9.0	
		0.0	1.7	0.1	7.4	
6. NEVER		3	201	27	1185	1416
		0.2	14.2	1.9	83.7	33.7
		7.5	33.4	29.7	34.2	
		0.1	4.8	0.6	28.2	
COLUMN TOTAL		40 1.0	602 14.3	91 2.2	3466 82.5	4199 100.0

2 OUT OF 24 (8.3%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 3.677
CHI SQUARE = 52.37753 WITH 15 DEGREES OF FREEDOM SIGNIFICANCE = 0.0000
PEARSON'S R = 0.00260 SIGNIFICANCE = 0.4330

NUMBER OF MISSING OBSERVATIONS = 502

CROSSTABULATION OF R059 PRESENT AFFILIATION BY LIBSYS2 RECODED LIBRARY-SYSTEM

R059	COUNT / ROW PCT / COL PCT / TOT PCT	LIBSYS2 1. DARTMOUTH	2. NORTHWESTERN	3. STANFORD	4. OTHER ARL LIBS	ROW TOTAL
1. FRESHMAN-SOPHOMO		15	135	13	741	904
		1.7	14.9	1.4	82.0	22.7
		41.7	23.1	14.4	22.8	
		0.4	3.4	0.3	18.6	
2. JUNIOR--SENIOR		9	166	21	1156	1352
		0.7	12.3	1.6	85.5	33.9
		25.0	28.4	23.3	35.3	
		0.2	4.2	0.5	29.0	
3. GRADUATE-MASTERS		0	70	9	463	542
		0.0	12.9	1.7	85.4	13.6
		0.0	12.0	10.0	14.1	
		0.0	1.8	0.2	11.6	
4. GRADUATE-DOCTORA		1	110	29	302	442
		0.2	24.9	6.6	68.3	11.1
		2.8	18.8	32.2	9.2	
		0.0	2.8	0.7	7.6	
5. GRADUATE-PROFESS		0	22	1	85	108
		0.0	20.4	0.9	78.7	2.7
		0.0	3.8	1.1	2.6	
		0.0	0.6	0.0	2.1	
6. FACULTY		3	30	3	122	158
		1.9	19.0	1.9	77.2	4.0
		8.3	5.1	3.3	3.7	
		0.1	0.8	0.1	3.1	
R059						
8. OTHER STATUS		2	45	10	289	346
		0.6	13.0	2.9	83.5	8.7
		5.6	7.7	11.1	8.8	
		0.1	1.1	0.3	7.3	
COLUMN TOTAL		36	585	90	3273	3984
		0.9	14.7	2.3	82.2	100.0

9 OUT OF 32 (28.1%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 0.976
CHI SQUARE = 145.58525 WITH 21 DEGREES OF FREEDOM SIGNIFICANCE = 0.0000
PEARSON'S R =-0.01829 SIGNIFICANCE = 0.1248

NUMBER OF MISSING OBSERVATIONS = 717

FILE FINAL (CREATION DATE = 08/03/82)

CROSSTABULATION

QUESTS6 (TABULATING) 1) THE MAIN FOCUS OF MY ACADEMIC WORK IS:
BY LIBSYS2 RECODED LIBRARY-SYSTEM

LIBSYS2

	COUNT / ROW PCT / COL PCT	DARTMOUT H DARTMES IN	STANFORD TERM	OTHER LIBS	ROW TOTAL
		1	2	3	4	
QUESTS6						
COURSE WORK	AQS6A	22 0.5 66.7	619 14.1 71.3	69 1.7 95.7	2676 61.3 76.8	3966 73.8
TEACHING	AQS6B	3 0.8 9.1	80 15.3 10.3	3 0.3 10.0	316 81.6 9.1	388 9.7
RESEARCH	AQS6C	10 0.9 62.6	233 15.2 20.6	51 3.3 58.0	1236 80.6 37.3	1535 38.3
	COLUMN TOTAL	33 0.8	388 16.6	88 2.2	3310 82.6	4019 100.0

PERCENTS AND TOTALS BASED ON RESPONDENTS

4019 VALID CASES 682 MISSING CASES

CLR USER GUEST: LIBRARY COMPARISON STARS RLG LIBS WITH APL

FILE FINAL (CREATION DATE = 08/05/92)

CROSSTABULATION OF LIBSYS BY ACADEMIC AREA

LIBSYS

ACADEMIC AREA	DARTMOUT	BIRTHAES	STANFORD	OTHER AR L LIBS	ROW TOTAL
ART AND HUMANITI	18	181	30	880	1109
	1.1	16.3	2.7	79.3	27.9
	51.8	30.1	46.9	22.0	
	0.5	4.6	0.8		
PHYS-BIO SCIENCE	9	31	7	810	481
	0.9	6.4	1.5	87.1	11.8
	11.1	5.2	10.9	10.3	
	0.1	1.0	0.2		
SOCIAL SCIENCES	0	193	25	375	753
	1.0	25.6	3.3	49.8	18.6
	25.0	32.3	39.1	10.1	
	0.0	4.9	0.6		
BUSINESS-MANAGEM	1	71	8	402	482
	0.2	14.7	1.7	83.4	11.9
	2.8	11.9	12.5	10.0	
	0.0	1.8	0.2		
EDUCATION	1	18	1	109	129
	0.8	14.0	0.8	84.5	3.2
	2.8	3.0	1.6	2.7	
	0.0	0.4	0.0		
CRD:KEER:RD	8	77	8	805	897
	0.9	8.6	0.9	89.8	10.1
	11.1	12.9	12.5	20.0	
	0.1	1.0	0.1		
MEDICAL/HEALTH S	0	19	0	210	229
	0.0	8.3	0.0	91.7	5.7
	0.0	3.2	0.0	5.2	
	0.0	0.5	0.0		
MUSIC	0	0	1	77	81
LAW	0.0	0.0	1.2	95.1	2.0
	0.0	0.0	1.6	1.9	
	0.0	0.0	0.0		
MAJOR WORDLANGS	0	7	0	98	115
	0.0	6.1	0.0	85.2	2.9
	0.0	1.2	0.0	2.4	
	0.0	0.2	0.0		
INTERDISCIPLINAR	0	22	0	101	123
	0.0	17.9	0.0	82.1	3.0
	0.0	3.7	0.0	2.5	
	0.0	0.5	0.0		
COLUMN TOTAL	58	599	80	4051	4988
	0.9	14.4	2.0	80.8	100.0

10 OUT OF 90 (11.1%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 0.730
CHI SQUARE = 85.10972 WITH 27 DEGREES OF FREEDOM SIGNIFICANCE = 0.0000
PEARSON'S R = 0.03851 SIGNIFICANCE = 0.0049

NUMBER OF MISSING OBSERVATIONS = 619

SLR USER QUEST: LIBRARY COMPARISON STUDY RLG L/NS VITH ARL

FILE FINAL (CREATION DATE = 08/03/88)

CROSSTABULATION OF AGE BY LIBSYS, RECODED LIBRARY-SYSTEM

AGE BY AGE GROUP IN LIBSYS, RECODED LIBRARY-SYSTEM

AGE	COUNT / ROW PCT / COL PCT / TOT PCT	LIBSYS: 1. DARTMOUT	2. HARVARD TERM	3. STANFORD	4. OTHER AR L LIBS	ROW TOTAL
18 AND UNDER	1.	0 / 0.0 / 0.0 / 0.0	1 / 0.1 / 0.2 / 0.0	0 / 0.0 / 0.0 / 0.0	56 / 99.3 / 0.7 / 0.6	57 0.6
19 - 19 YEARS	2.	10 / 1.6 / 55.0 / 0.1	129 / 20.0 / 25.5 / 1.3	11 / 1.7 / 11.6 / 0.1	495 / 76.7 / 13.1 / 14.0	645 10.1
20 - 24 YEARS	3.	11 / 0.8 / 45.0 / 0.1	251 / 19.8 / 49.6 / 2.7	35 / 2.8 / 36.8 / 0.4	1149 / 90.6 / 30.4 / 32.7	1266 44.7
25 - 29 YEARS	4.	1 / 0.1 / 5.0 / 0.0	101 / 11.1 / 20.0 / 1.1	38 / 4.2 / 40.0 / 0.4	767 / 84.6 / 20.3 / 21.8	907 25.7
30 - 44 YEARS	5.	0 / 0.0 / 0.0 / 0.0	18 / 1.9 / 3.6 / 0.2	1 / 0.1 / 1.1 / 0.0	931 / 97.9 / 24.6 / 26.5	950 26.9
45 - 54 YEARS	6.	0 / 0.0 / 0.0 / 0.0	10 / 5.3 / 2.0 / 0.1	1 / 0.5 / 1.1 / 0.0	178 / 94.2 / 4.7 / 5.1	189 5.4
55 - 64 YEARS	7.	0 / 0.0 / 0.0 / 0.0	11 / 3.1 / 2.2 / 0.1	0 / 0.0 / 0.0 / 0.0	345 / 96.9 / 9.1 / 9.8	356 10.1
65 AND OVER	8.	0 / 0.0 / 0.0 / 0.0	0 / 0.0 / 0.0 / 0.0	1 / 3.4 / 1.1 / 0.0	28 / 96.6 / 0.7 / 0.8	29 0.8
COLUMN TOTAL		22 0.6	511 14.5	93 2.6	3787 80.3	3513 100.0

12 OUT OF 32 (37.5%) OF THE VALUE CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 0.202
CHI-SQUARE = 33.42768 WITH 21 DEGREES OF FREEDOM SIGNIFICANCE = 0.0001
PEARSON'S R =-0.09833 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 484

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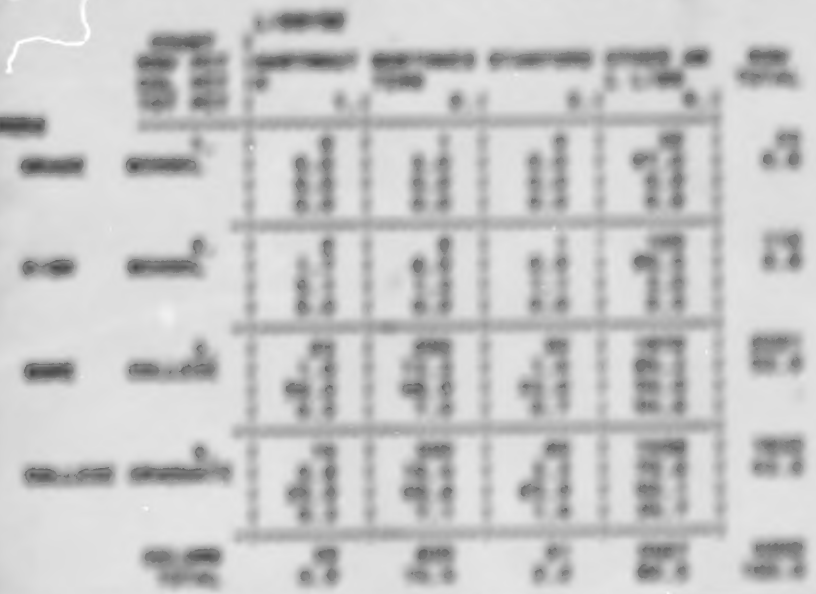

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Appendix D

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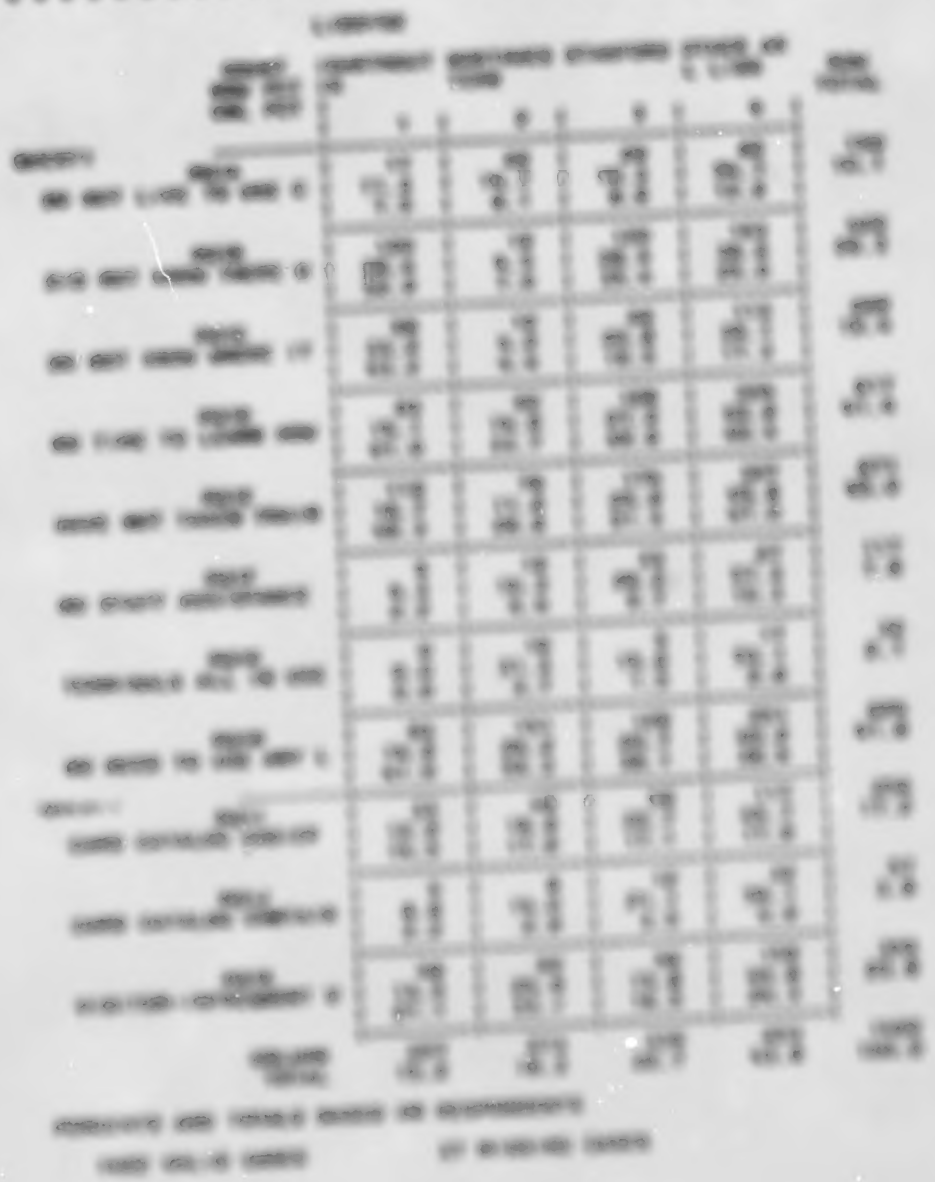
This appendix contains exhibits and tables referred to in Chapter 7:

Table D1: Responses Concerning Size for Schools
Table D2: Responses Concerning Use of Computer Learning Time
Table D3: Responses Concerning Use/Effectiveness of Learning
Table D4: Responses General Opinion of Computer Catalogs
Table D5: Responses Net Expectations of Future Use
Table D6: Responses Comparison of Computer and Manual Catalogs
Table D7: Responses Library Use
Table D8: Responses Use of the Card Catalog
Table D9: Responses Other Computer Use
Table D10: Responses Academic Status
Table D11: Responses Academic Focus
Table D12: Responses Academic Area
Table D13: Responses Age
Table D14: Responses Sex
Table D15: Responses Education Level



FILE NUQSYS (CREATION DATE = 08/03/82)

CROSSTABULATION OF QST2 TIME NEEDED TO LEARN TO USE COMPUTER CAT BY LIBSYS2 RECODED LIBRARY-SYSTEM

QST2	LIBSYS2 1. DARTMOUTH	2. NORTHWESTERN	3. STANFORD	4. OTHER ARL LIBS	ROW TOTAL
1. DAY OR MORE	1	6	4	22	33
	3.0	18.2	12.1	66.7	2.2
	0.4	2.2	1.2	3.4	
	0.1	0.4	0.3	1.5	
2. HALF DAY - A DAY	4	7	12	25	48
	8.3	14.6	25.0	52.1	3.2
	1.8	2.6	3.6	3.8	
	0.3	0.5	0.8	1.7	
3. 1 HOUR- HALF DAY	19	11	31	65	126
	15.1	8.7	24.6	51.6	8.5
	8.4	4.0	9.3	10.0	
	1.3	0.7	2.1	4.4	
4. 30 MIN - 1 HOUR	41	55	73	149	318
	12.9	17.3	23.0	46.9	21.4
	18.1	20.1	21.8	22.8	
	2.8	3.7	4.9	10.0	
5. 15 - 30 MINUTES	83	73	98	148	402
	20.6	18.2	24.4	36.8	27.0
	36.6	26.6	29.3	22.7	
	5.6	4.9	6.6	9.9	
6. 0 - 15 MINUTES	79	122	117	244	562
	14.1	21.7	20.8	43.4	37.7
	34.8	44.5	34.9	37.4	
	5.3	8.2	7.9	16.4	
COLUMN TOTAL	227	274	335	653	1489
	15.2	18.4	22.5	43.9	100.0

CHI SQUARE = 39.37434 WITH 15 DEGREES OF FREEDOM SIGNIFICANCE = 0.0006
PEARSON'S R =-0.08805 SIGNIFICANCE = 0.0003

NUMBER OF MISSING OBSERVATIONS = 40

FILE NUQSYS (CREATION DATE = 08/03/82)

CROSSTABULATION OF Q3T3 HOW DIFFICULT-EASY TO LEARN TO USE C C BY LIBSYS2 RECODED LIBRARY-SYSTEM

Q3T3	LIBSYS2	DARTMOUTH	NORTHWES TERN	STANFORD	OTHER AR L LIBS	ROW TOTAL
		1.	2.	3.	4.	
1. VERY DIFFICUL	COUNT	0	3	1	3	9
	ROW PCT	0.0	33.3	33.3	33.3	0.6
	COL PCT	0.0	1.1	0.9	0.5	
	TOT PCT	0.0	0.2	0.2	0.2	
2. SOMEWHAT DIFFICU	COUNT	31	27	35	126	219
	ROW PCT	14.2	12.3	16.0	57.5	14.5
	COL PCT	13.5	9.8	10.3	19.0	
	TOT PCT	2.1	1.8	2.3	8.4	
3. SOMEWHAT EASY	COUNT	92	129	156	323	700
	ROW PCT	13.1	18.4	22.3	46.1	46.5
	COL PCT	40.2	46.9	45.9	48.8	
	TOT PCT	6.1	8.6	10.4	21.4	
4. VERY EASY	COUNT	106	116	146	210	578
	ROW PCT	18.3	20.1	25.3	36.3	38.4
	COL PCT	46.3	42.2	42.9	31.7	
	TOT PCT	7.0	7.7	9.7	13.9	
COLUMN TOTAL		229	275	340	662	1506
		15.2	18.3	22.6	44.0	100.0

4 OUT OF 16 (25.0%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 1.369
CHI SQUARE = 37.97421 WITH 9 DEGREES OF FREEDOM SIGNIFICANCE = 0.0000
PEARSON'S R =-0.11749 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 23

FILE RUQSYS (CREATION DATE = 08/03/82)

CROSSTABULATION OF QST4 OVERALL ATTITUDE TOWARD COMPUTER CATALOG BY LIBSYS2 RECODED LIBRARY-SYSTEM

QST4	LIBSYS2				
COUNT / ROW PCT / COL PCT / TOT PCT	DARTMOUTH 1.	NORTHWESTERN 2.	STANFORD 3.	OTHER ARL LIBS 4.	ROW TOTAL
1. VERY FAVORABLE	93	125	160	247	625
	14.9	20.0	25.6	39.5	43.0
	42.5	46.3	48.5	38.9	
	6.4	8.6	11.0	17.0	
2. SOMEWHAT FAVORAB	104	127	145	323	699
	14.9	18.2	20.7	46.2	48.1
	47.5	47.0	43.9	50.9	
	7.2	8.7	10.0	22.2	
3. SOMEWHAT UNFAVOR	16	13	20	57	106
	15.1	12.3	18.9	53.8	7.3
	7.3	4.8	6.1	9.0	
	1.1	0.9	1.4	3.9	
4. VERY UNFAVORA	6	5	5	8	24
	25.0	20.8	20.8	33.3	1.7
	2.7	1.9	1.5	1.3	
	0.4	0.3	0.3	0.6	
COLUMN TOTAL	219	270	330	635	1454
	15.1	18.6	22.7	43.7	100.0

2 OUT OF 16 (12.5%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 3.615
CHI SQUARE = 15.46637 WITH 9 DEGREES OF FREEDOM SIGNIFICANCE = 0.0789
PEARSON'S R = 0.03138 SIGNIFICANCE = 0.1159

NUMBER OF MISSING OBSERVATIONS = 75

FILE RUQSYS (CREATION DATE = 08/03/82)

CROSSTABULATION OF QST5 HOW LIKELY TO USE COMPUTER CAT IN FUTURE BY LIBSYS2 RECODED LIBRARY-SYSTEM

QST5	LIBSYS2	1. DARTMOUTH	2. NORTHWESTERN	3. STANFORD	4. OTHER ARL LIBS	ROW TOTAL
1. VERY LIKELY	COUNT	41	73	127	189	430
	ROW PCT	9.5	17.0	29.5	44.0	28.8
	COL PCT	18.1	26.5	37.5	29.0	
	TOT PCT	2.7	4.9	8.5	12.7	
2. SOMEWHAT LIKELY	COUNT	104	121	132	274	631
	ROW PCT	16.5	19.2	20.9	43.4	42.3
	COL PCT	46.0	44.0	38.9	42.0	
	TOT PCT	7.0	8.1	8.8	18.4	
3. SOMEWHAT UNLIKEL	COUNT	43	52	51	132	278
	ROW PCT	15.5	18.7	18.3	47.5	18.6
	COL PCT	19.0	18.9	15.0	20.2	
	TOT PCT	2.9	3.5	3.4	8.8	
4. VERY UNLIKELY	COUNT	38	29	29	57	153
	ROW PCT	24.8	19.0	19.0	37.3	10.3
	COL PCT	16.8	10.5	8.6	8.7	
	TOT PCT	2.5	1.9	1.9	3.8	
COLUMN TOTAL		226	275	339	652	1492
		15.1	18.4	22.7	43.7	100.0

CHI SQUARE = 35.27074 WITH 9 DEGREES OF FREEDOM SIGNIFICANCE = 0.0001
PEARSON'S R =-0.08309 SIGNIFICANCE = 0.0007

NUMBER OF MISSING OBSERVATIONS = 37

FILE NUQSYS (CREATION DATE = 08/03/88)

CROSSTABULATION OF Q8T6 COMPUTER--CARD CATALOG COMPARISON BY LIBSY88 RECODED LIBRARY-SYSTEM PAGE 1 OF 1

Q8T6		LIBSY88 1. DARTMOUT	2. NORTHWES TERN	3. STANFORD	4. OTHER AR L LIBS	ROW TOTAL
1. BETTER	COUNT	29	99	86	185	399
	ROW PCT	7.4	23.9	21.8	47.0	28.7
	COL PCT	14.6	35.9	28.1	30.4	
	TOT PCT	2.1	6.8	6.3	13.5	
2. EQUAL	COUNT	25	49	37	117	224
	ROW PCT	11.2	20.1	16.5	52.2	16.3
	COL PCT	12.6	17.8	12.1	19.2	
	TOT PCT	1.8	3.5	2.7	8.5	
3. WORSE	COUNT	6	10	13	17	46
	ROW PCT	13.0	21.7	28.3	37.0	3.3
	COL PCT	3.0	3.6	4.2	2.8	
	TOT PCT	0.4	0.7	0.9	1.2	
9. CAN'T DECIDE	COUNT	138	113	170	290	711
	ROW PCT	19.4	15.9	23.9	40.8	51.7
	COL PCT	69.7	43.1	55.6	47.6	
	TOT PCT	10.0	8.2	12.4	21.1	
	COLUMN TOTAL	198	262	306	609	1375
		14.4	19.1	22.3	44.3	100.0

CHI SQUARE = 97.79481 WITH 9 DEGREES OF FREEDOM SIGNIFICANCE = 0.0000
PEARSON'S R =-0.09810 SIGNIFICANCE = 0.0001

NUMBER OF MISSING OBSERVATIONS = 154

FILE NUQSYS (CREATION DATE = 08/03/82)

CROSSTABULATION OF GST? | USE THIS LIBRARY BY LIBSYS2 RECODED LIBRARY-SYSTEM

GST?	LIBSYS2	DARTMOUT H	DARTMOUTH WORTHWES TERN	STANFORD	OTHER ARL LIBS	ROW TOTAL
DAILY	1.	96	90	136	231	273
		16.7	15.7	27.5	40.2	38.1
		42.1	33.0	46.3	35.0	
		6.4	6.0	10.5	15.4	
WEEKLY	2.	89	90	128	238	340
		15.6	16.7	23.7	44.1	36.0
		36.8	33.0	37.5	36.1	
		5.6	6.0	8.5	15.8	
MONTHLY	3.	29	42	20	66	161
		13.3	23.2	16.0	67.3	10.1
		10.5	15.6	6.5	11.0	
		1.8	2.8	1.9	5.7	
6 TIMES A YEAR	5.	20	25	11	61	117
		17.1	21.6	9.6	52.1	7.8
		6.8	9.2	3.0	9.8	
		1.3	1.7	0.7	4.1	
ONCE A YEAR	9.	1	6	9	13	29
		3.3	25.0	16.7	56.8	1.8
		0.4	2.0	1.0	2.0	
		0.1	0.4	0.5	0.9	
NOT BEFORE TODAY	0.	3	20	11	31	65
		4.6	30.8	16.9	47.7	4.3
		1.3	7.3	3.0	4.7	
		0.2	1.3	0.7	2.1	
	COLUMN TOTAL	239 15.8	273 18.2	341 22.7	660 43.9	1502 100.0

0 OUT OF 20 (0.0%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 3.043
CHI SQUARE = 65.67507 WITH 15 DEGREES OF FREEDOM SIGNIFICANCE = 0.0001
PEARSON'S R = 0.03807 SIGNIFICANCE = 0.0681

NUMBER OF MISSING OBSERVATIONS = 37

CLR NON-USER QUEST: XTABS OF RLG LIBS WITH OTHER ARL 08/11/82 PAGE 99

FILE RUGSYS (CREATION DATE = 08/03/82)

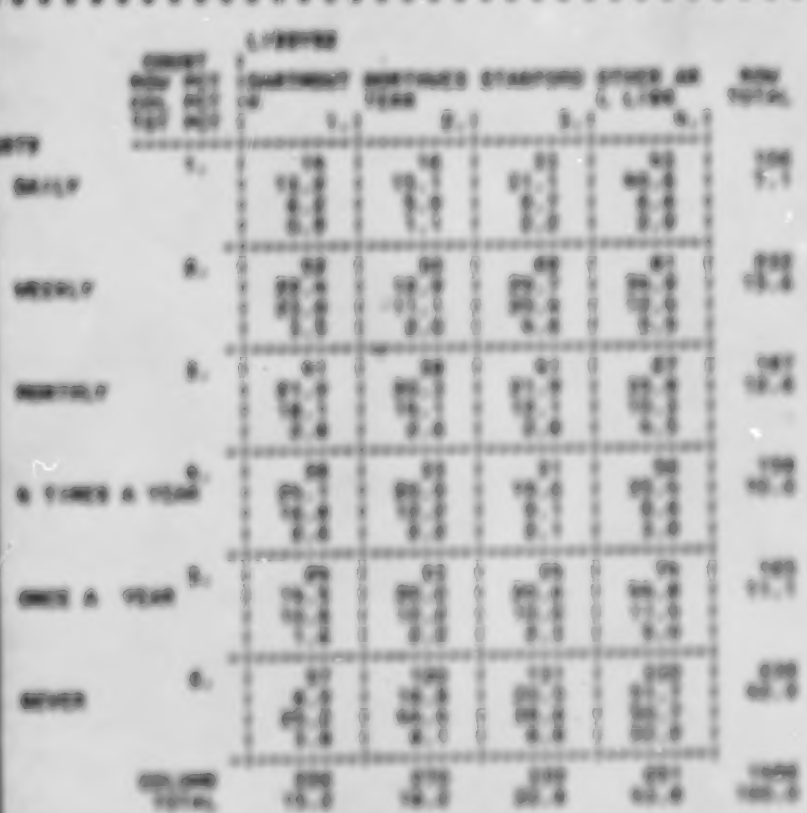
CROSSTABULATION OF ROB BY LIBSYS2 RECODED LIBRARY-SYSTEM PAGE 1 OF 1

ROB: I USE LIBRARY'S OTHER CATALOGS	LIBSYS2: DARTMOUT	MORTAVES	STANFORD	OTHER AR L LIBS	ROW TOTAL
1. EVERY VISIT	8 7.2 8.1 0.8	12 10.8 4.4 0.8	31 27.9 9.1 2.1	60 54.1 9.2 6.0	111 7.4
2. MOST VISITS	22 10.4 10.6 1.9	13 6.1 5.5 1.0	78 33.5 22.9 5.0	111 47.6 17.0 7.4	233 15.6
3. OCCASIONALLY	110 21.4 44.7 7.9	71 13.8 30.0 4.8	130 25.3 40.5 9.3	193 37.5 29.6 13.0	513 34.4
4. RARELY	66 16.5 26.8 4.4	121 30.7 44.3 8.1	60 15.2 18.7 4.0	198 50.5 30.4 13.3	393 26.4
5. NOT BEFORE TODAY	19 7.5 7.8 1.3	56 22.0 19.8 3.8	22 11.8 7.1 1.7	89 58.7 13.7 6.0	181 12.1
COLUMN TOTAL	225 15.1	273 18.3	321 21.5	650 43.7	1489 100.0

CHI SQUARE = 127.82111 WITH 12 DEGREES OF FREEDOM SIGNIFICANCE = 0.0000
PEARSON'S R =-0.08734 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 57

TABLE 1 OF 1



15

OLD NEW-USER QUERY: STUDY OF OLD LIBS WITH OTHER ARL

FILE NAGOYA (CREATION DATE = 08/05/88)

CROSSTABULATION OF

ROW: PRIMARY AFFILIATION BY LIBSTAT REVISED LIBRARY-SYSTEM PAGE

	LIBSTAT				
PRIMARY AFFILIATION	1 DARTMOUT	2 HARVARD	3 STANFORD	4 OTHER ARL LIBS	ROW TOTAL
1 FRESHMAN-SOPHOMORE	68 35.8% 40.5% 6.9%	69 36.3% 39.1% 7.0%	53 27.9% 31.9% 5.4%	70 36.8% 41.7% 7.1%	260 26.4%
2 JUNIOR-SENIOR	60 31.6% 35.7% 6.1%	60 31.6% 34.1% 6.1%	48 25.3% 28.9% 4.9%	72 37.9% 42.9% 7.3%	240 24.4%
3 GRADUATE-MASTERS	17 10.0% 10.1% 1.7%	25 14.7% 14.2% 2.5%	23 13.5% 13.9% 2.3%	25 14.7% 14.9% 2.5%	90 9.1%
4 GRADUATE-DOCTORAL	3 1.6% 1.8% 0.3%	17 8.9% 9.7% 1.7%	17 8.9% 10.2% 1.7%	21 11.0% 12.5% 2.1%	58 5.9%
5 GRADUATE-PROFESS	20 11.7% 11.9% 2.0%	15 8.8% 8.5% 1.5%	15 8.8% 9.0% 1.5%	19 11.1% 11.3% 1.9%	69 7.0%
6 FACULTY	3 3.1% 1.8% 0.3%	3 3.1% 1.7% 0.3%	3 3.1% 1.8% 0.3%	1 1.0% 0.6% 0.1%	10 1.0%
7 STAFF	0 0.0% 0.0% 0.0%	0 0.0% 0.0% 0.0%	1 100.0% 0.6% 0.1%	0 0.0% 0.0% 0.0%	1 0.1%
8 OTHER	3 15.0% 1.8% 0.3%	2 10.0% 1.1% 0.2%	3 15.0% 1.8% 0.3%	12 60.0% 7.1% 1.2%	20 2.0%
COLUMN TOTAL	168 17.1%	178 18.1%	169 17.2%	270 27.4%	985 100.0%

X OUT OF 12 (16.0%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 1.707
CHI SQUARE = 116.62945 WITH 21 DEGREES OF FREEDOM SIGNIFICANCE = 0.0000
PEARSON'S R = -0.10777 SIGNIFICANCE = 0.0001

NUMBER OF MISSING OBSERVATIONS = 15

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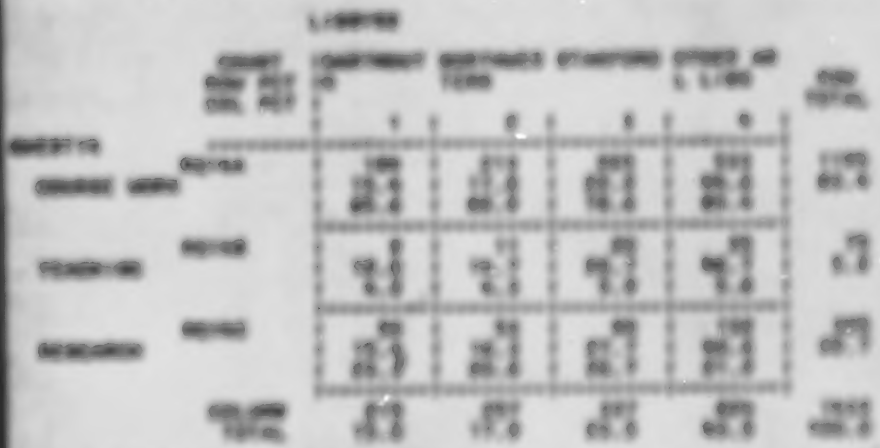

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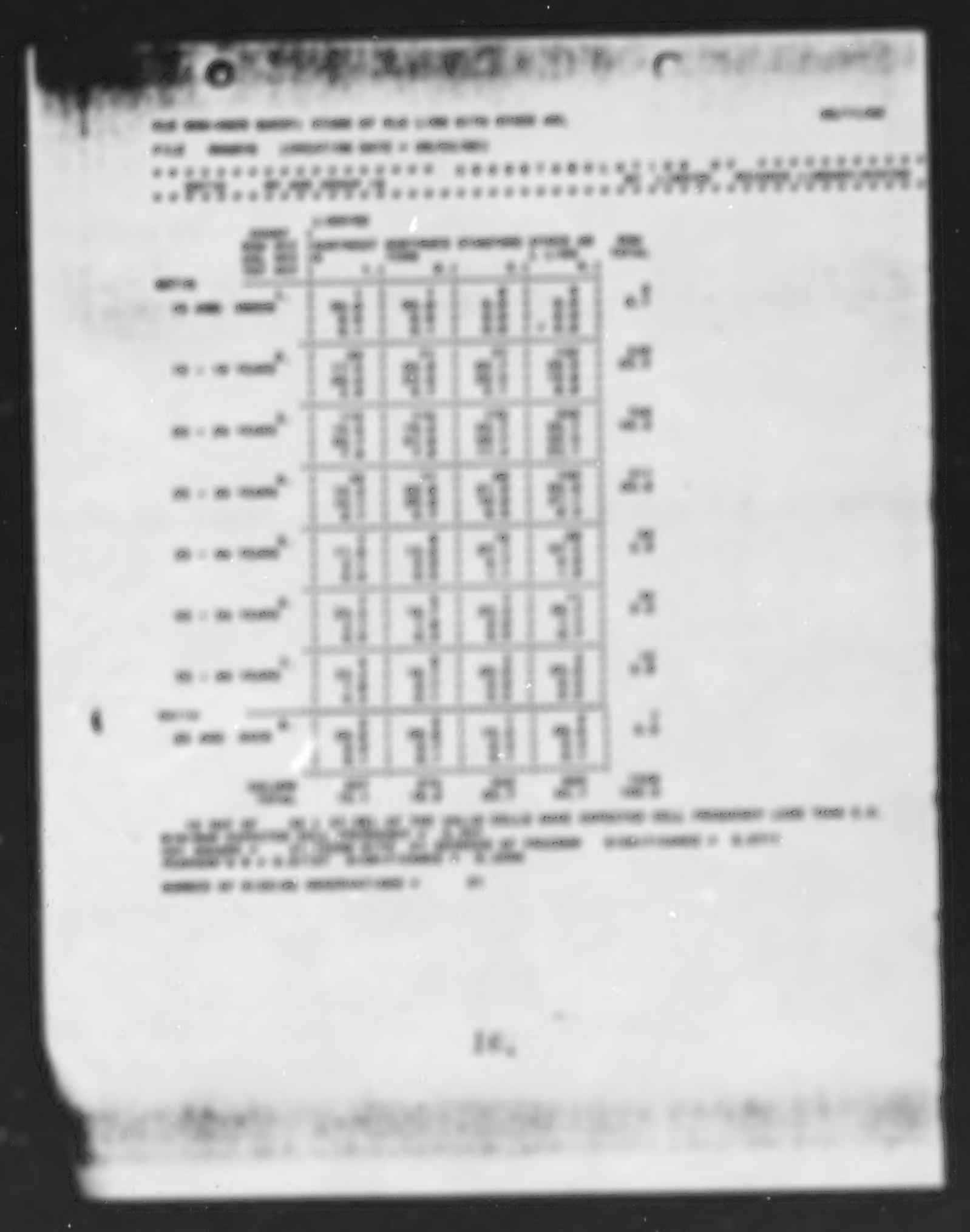
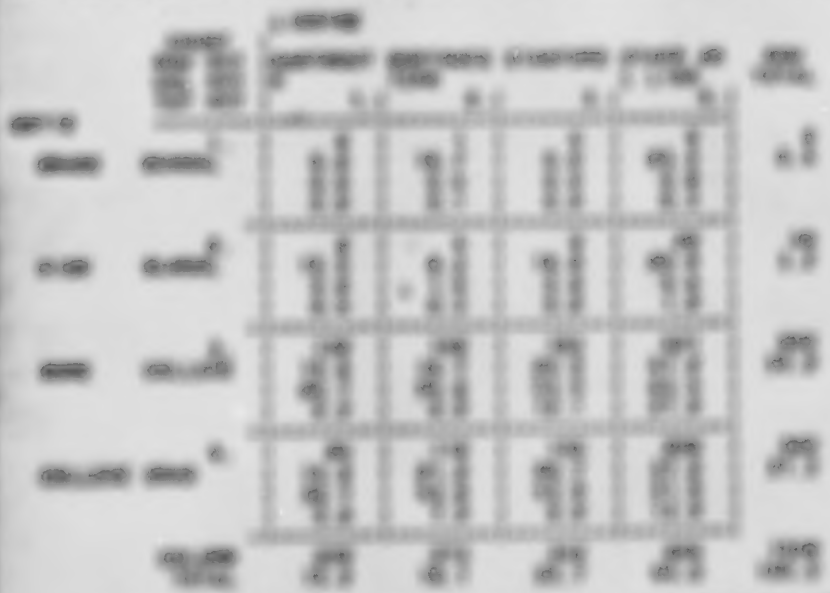




Appendix B

LIBRARY STAFF INTERVIEW SCHEDULE

Date:_____ Library:_____ No. Terminals:____

No. of Staff:__Reference, __Circulation, __Catalog Info. __ILL, __

Other _____

EXPLAIN THE PURPOSE OF THE INTERVIEW, DETERMINE THE LIBRARIES AND FUNCTIONAL AREAS OF THE INTERVIEWEES, EXPLAIN THE PROCEDURE AND THEN BEGIN THE QUESTIONS. RECORD KEY REMARKS VERBATIM IF POSSIBLE. MAKE FREQUENT USE OF PROBES SUCH AS "DOES ANYONE HAVE ANYTHING TO ADD TO THAT..." "DID ANYONE HAVE A DIFFERENT OR CONTRASTING EXPERIENCE..." "DID ANYONE HAVE A SIMILAR EXPERIENCE OR OBSERVATION..." "HOW IMPORTANT DO YOU FEEL THAT POINT IS..." "CAN YOU THINK OF AN EXAMPLE OF THAT..." "FOR INSTANCE..."

A. Thank you for taking time to join us in thinking about how your computer catalog is being used. As most of you know, we are involved in a study of how individuals use computer catalogs so that we can improve computer catalogs and the resources that libraries have to help people use computer catalogs. Your views are especially important because it's likely that problems and questions have come to you first and because thoughts on ways to do things better have probably occurred to you since the computer catalog has been in operation.

B. I'd like to begin by having each of you tell me which library you are in and whether you work mainly in reference, circulation, ILL or some other area.

C. The way we will proceed is that I'll ask a general question and you give me your views on it. Please feel free to supplement what another person says or present a contrasting or different view. There are no right or wrong views, what we need is a clear expression of observations and views from each of you and it's not unusual that people have somewhat different experiences. One point, whenever you can give an example of a problem, use, advantage, question etc. that's especially helpful.

1. I'd like to know a little about your use of the computer catalog.

a. How many of you use it almost every day?_____

b. How many of you use it during the week but not every day?_____

c. How many of you use it during the month but not every week?_____

2. I'd like each of you to identify the most frequent problem or question that you get as a result of someone's use of the catalog?

3. Do some kinds of individuals have these problems more than others?

4. Now let's discuss some of the problems you have identified. What do you think causes people to have problems with_____ ?

5. Do you have any ideas about how the printed aids could be improved or new aids that should be produced?

6. Do you have any ideas about how the online aids should be improved or new aids developed?

7. Do you have any ideas about staff training or documentation that would help you assist people with problems?

8. Any thoughts on other changes or improvements?

9. What effects-- positive or negative-- has the computer catalog had on reference desk activity?

10. What effects has it had in circulation desk activity?

11. What effects has it had on interlibrary lending activity?

12. What effects has it had on other library services and activities such as instructional or promotional activities?

13. Do you know of any quantitative data that indicates the effects we have discussed?

14. What effects has the computer catalog had on people's use of reference material?

15. Can you identify any effects on the use of other materials in your collection?

16. What effects has the computer catalog had on the working relationship between departments?

17. What effects has the computer catalog had on how the public perceives library services or the library staff?

18. Thank you again. We have a few minutes of our time left. Are there any questions you would like to ask about our study?

Appendix I

PILOT USER AND NONUSER QUESTIONNAIRES

1. Pilot User Questionnaire
2. Pilot Nonuser Questionnaire

BEST COPY AVAILABLE

OFFICE USE ONLY

DATE

TIME

VERIFIED

BY

DATE

COUNCIL ON
LIBRARY RESOURCES

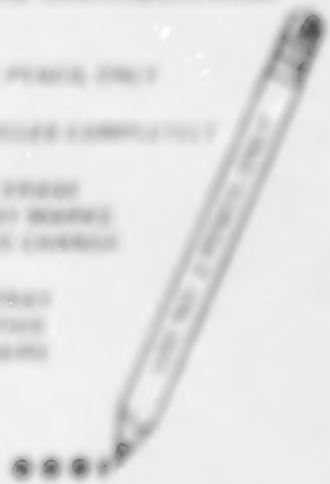
COMPUTER CATALOG STUDY

USER QUESTIONNAIRE

THE LIBRARY IS CONDUCTING A STUDY OF ITS COMPUTER CATALOG TO IMPROVE IT. THIS QUESTIONNAIRE IS A WAY TO COMMUNICATE YOUR VIEWS. IT SHOULD TAKE YOU ONLY ABOUT 10 MINUTES TO COMPLETE. YOUR RESPONSES ARE CONFIDENTIAL. PLEASE DO NOT WRITE YOUR NAME ANYWHERE ON THE QUESTIONNAIRE. THANK YOU.

MARKING INSTRUCTIONS

- USE A NO. 2 PENCIL ONLY
- FILL THE CIRCLE COMPLETELY
- BE SURE TO ERASE CLEANLY ANY MARKS YOU WISH TO CHANGE
- MAKE NO STRAY MARKS ON THIS QUESTIONNAIRE



2657

DO NOT WRITE IN THIS AREA

PART I: ABOUT YOUR MOST RECENT SEARCH

INSTRUCTIONS: Please answer these questions with respect to the LAST TIME you used the computer catalog.

1. I CAME TO THE SEARCH WITH
(Mark all that apply)
- a. A complete author's name
- b. Part of an author's name
- c. A complete title
- d. Part of a title
- e. A topic word(s)
- f. A subject heading(s)
- g. A complete call number
- h. Part of a call number
- i. Other: _____

2. MY SEARCHING THE COMPUTER CATALOG I WAS TRYING TO FIND
(Mark all that apply)
- a. A specific book, journal or magazine
- b. Books, journals or magazines on a topic
- c. Books by a specific author
- d. Information such as publisher, date, spelling of a name, etc.
- e. If a book I'd found the library has or on the shelf
- f. Another record that has a book, journal or magazine that I want
- g. Ways to do this to use the computer catalog
- h. Other: _____

3. I DISCOVERED HOW WHAT I WANTED BY
(Mark all that apply)
- a. A complete author's name
- b. Part of an author's name
- c. A complete title
- d. Part of a title
- e. A topic word(s)
- f. A subject heading(s)
- g. A complete call number
- h. Part of a call number
- i. Other: _____

4. I NEED THIS INFORMATION FOR
(Mark all that apply)
- a. Recreational need
- b. Making or doing something
- c. My work or job
- d. Personal interest
- e. A hobby
- f. Class or course reading
- g. A course paper or report
- h. A thesis or dissertation
- i. Writing a paper, article or book
- j. Teaching or planning a course
- k. Keeping up on a topic or subject

5. DO THIS SEARCH I FOUND
(Mark one only)
- a. More than I was looking for
- b. All or most of what I was looking for
- c. Some of what I was looking for
- d. Nothing I was looking for

6. IN RELATION TO WHAT I WAS LOOKING FOR THE SEARCH WAS
(Mark one only)
- a. Very satisfactory
- b. Somewhat satisfactory
- c. Somewhat unsatisfactory
- d. Very unsatisfactory

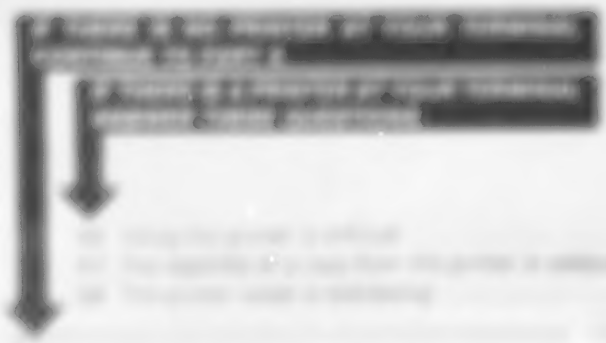
7. I CAME ACROSS THINGS OF INTEREST OTHER THAN WHAT I WAS LOOKING FOR
- a. Yes
- b. No

8. IN ADDITION TO THE COMPUTER CATALOG SEARCH I HAVE ALSO USED OR WILL USE
(Mark all that apply)
- a. A card book or microform catalog
- b. Printed indexes
- c. None of the above
- d. Other: _____

9. I DID ANY OF IN DOING THIS COMPUTER CATALOG SEARCH FROM
(Mark all that apply)
- a. I did not get help
- b. Printed material at right
- c. Instructions on the terminal screen
- d. Library staff member
- e. Friend, family

[illegible]

[illegible]



PART A IMPROVING THE COMPUTER CATALOG

Matching heading. Return this response or responses that best reflect your views about changes that should be made in the computer catalog.

PART A: COMPARING THE CARD CATALOG AND THE COMPUTER CATALOG

[illegible]

PART B: ABOUT YOURSELF

[illegible]

[illegible]

[illegible]

[illegible]

COUNCIL ON LIBRARY RESOURCES

COMPUTER CATALOG STUDY

QUESTIONNAIRE

21 THE MAIN FOCUS OF MY ACADEMIC WORK AT THE PRESENT TIME IS

a. On-the-Work
b. Teaching
c. Research
d. Both Teaching and Research
e. Teaching and Course Work
f. Research and Course Work

22 MY PRESENT AFFILIATION WITH THIS COLLEGE OR UNIVERSITY IS

a. Undergraduate
b. Graduate - master's level
c. Graduate - doctoral level
d. Faculty
e. Non-faculty Research Staff
f. Non-faculty Teaching Staff
g. College or University Staff
h. Other status
i. Anything or Nothing
j. No affiliation

THIS COMPLETES THE QUESTIONNAIRE. PLEASE RETURN IT. THANK YOU FOR PARTICIPATING IN THIS STUDY OF THE COMPUTER CATALOG.

0816

Appendix J

FINAL USER AND MONUSER QUESTIONNAIRES

1. Final User Questionnaire
2. Final Monuser Questionnaire

Council on Library Resources

COMPUTER CATALOG STUDY

User Questionnaire

The library is conducting a study of its computer catalog to improve it. This questionnaire is a way to communicate your views. It should take you only about 15 minutes to complete. Your responses are confidential. Please do not write your name anywhere on the questionnaire. Thank you.

MARKING INSTRUCTIONS

- USE A NO. 2 PENCIL ONLY
- FILL THE CIRCLES COMPLETELY
- ERASE COMPLETELY ANY MARKS YOU WISH TO CHANGE
- MAKE NO STRAY MARKS ON THIS QUESTIONNAIRE

22092

PART 1: ABOUT YOUR MOST RECENT SEARCH

INSTRUCTIONS: Please answer these questions about the computer catalog search you just completed.

[illegible]

PART A: ABOUT YOURSELF

INSTRUCTIONS: Your responses are confidential. Please do not write your name or address on this questionnaire.

A1 In which do you live?

A2 Do you live in a single parent family?

A3 Do you live with a step parent or foster parent?

A4 Do you live in a household where you are the only adult?

A5 Do you live in a household where you are the only adult and you have dependent children?

A6 Do you live in a household where you are the only adult and you have dependent children?

A7 Do you live in a household where you are the only adult and you have dependent children?

A8 Do you live in a household where you are the only adult and you have dependent children?

A9 Do you live in a household where you are the only adult and you have dependent children?

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OFFICE USE ONLY

Council on Library Resources

COMPUTER CATALOG STUDY

Questionnaire

Council on Library Resources

COMPUTER CATALOG STUDY

Questionnaire

The library has a computer catalog and not everyone has had a chance to use it yet. If you have NEVER USED THE COMPUTER CATALOG you can contribute to the quality of library services by completing this questionnaire. It takes about five minutes. Your responses are confidential. Please do not write your name anywhere on the questionnaire. Thank you.

MARKING INSTRUCTIONS

- USE A NO. 2 PENCIL ONLY
- FILL THE CIRCLES COMPLETELY
- BE SURE TO ERASE CLEANLY ANY MARKS YOU WISH TO CHANGE
- MAKE NO STRAY MARKS ON THIS QUESTIONNAIRE

14430

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PART 1: WHAT YOU THINK ABOUT THE COMPUTER CATALOG

INSTRUCTIONS: Please mark the response that best describes how you view a computer catalog.

1. I have not used the computer catalog up to now because:
(Mark ALL that apply)

a. I do not like to use computers ○
b. I did not know there was a computer catalog ○
c. ○
d. I have not had time to learn to use it ○
e. ○
f. ○
g. There has not been any staff at the terminals to assist me in using it ○
h. ○
i. I have not needed to use any library catalog recently ○
j. The card catalog is easier to use ○
k. ○
l. I am a visitor or infrequent user of this library ○

2. How much time do you think it takes to learn to use the computer catalog?

a. ○
b. ○
c. ○
d. ○
e. ○
f. ○

3. How difficult or easy do you think it would be to learn to use the computer catalog?

a. ○
b. ○
c. ○
d. ○

4. My overall or general attitude toward the computer catalog is:

a. ○
b. ○
c. ○
d. ○

5. How likely are you to use the computer catalog in the future?

a. ○
b. ○
c. ○
d. ○

6. Compared to the card, book, or microfiche catalog in this library the computer catalog is:
(Mark ONE only)

a. ○
b. ○
c. ○
d. ○

PART 2: ABOUT YOURSELF

INSTRUCTIONS: Your responses are confidential. Please do not write your name anywhere on this questionnaire.

7. I come to this library:

a. ○
b. ○
c. ○
d. ○
e. ○
f. ○

8. I use this library's book, card or microfilm catalog:

a. ○
b. ○
c. ○
d. ○
e. ○

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9. I use a computer system other than the library's computer catalog

a. Daily ○
b. Weekly ○
c. Monthly ○
d. About four times a year ○
e. About once a year ○
f. Never ○

10. My age group is

a. 14 and under ○
b. 15 - 19 years ○
c. 20 - 24 years ○
d. 25 - 34 years ○
e. 35 - 44 years ○
f. 45 - 54 years ○
g. 55 - 64 years ○
h. 65 and over ○

11. I am

a. Female ○
b. Male ○

12. Mark your current or highest educational level (Mark ONE only)

a. Grade School or Elementary School ○
b. High School or Secondary School ○
c. Some College or University ○
d. College or University Graduate ○

If you are not completing this questionnaire at a college or university, please stop here. Thank you.

If you are completing this questionnaire at a college or university, please continue.

13. The category that best describes my academic area is: (Mark ONE only)

a. Arts and Humanities ○
b. Physical/Biological Sciences ○
c. Social Sciences ○
d. Business Management ○
e. Education ○
f. Engineering ○
g. Medical/Health Sciences ○
h. Law ○
i. Major not declared ○
j. Interdisciplinary ○

14. The main focus of my academic work at the present time is (Mark ALL that apply)

a. Course Work ○
b. Teaching ○
c. Research ○

15. My present affiliation with this college or university is:

a. Freshman/Sophomore ○
b. Junior/Senior ○
c. Graduate - masters level ○
d. Graduate - doctoral level ○
e. Graduate - professional school ○
f. Faculty ○
g. Staff ○
h. Other ○

Thank you for participating in this study of the computer catalog. This completes the questionnaire. Please return it.

SUPPLEMENTARY QUESTIONNAIRE ITEMS

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VERIFIED

BY _____

DATE _____

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